# Public Safety and Sour Gas
# Annual Progress Report

April 2002

EUB Alberta Energy and Utilities Board

**ALBERTA ENERGY AND UTILITIES BOARD**

**Public Safety and Sour Gas Annual Progress Report**

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# From the Chairman: Changing Alberta's Sour Gas Industry A Report on the EUB Public Safety and Sour Gas Project

## The Pace of Change

It has been one year since I committed to acting on the Public Safety and Sour Gas recommendations, and I am pleased to report that we have accomplished more than we set out to do at that time. Public safety is the EUB's highest priority and we are making significant progress in ensuring that Alberta's regulatory framework continues to reflect this.

Since its creation in the early 1930's, the EUB and its predecessors have overseen phenomenal growth in the petroleum industry. As an organization we have constantly adapted to keep pace with the growth of this industry - growth that has resulted, at times, in a conflict between the demand for sour gas and the increasing population of those rural communities where sour gas development is occurring. This conflict has led to greater public demand for more open communication and involvement in energy development.

As an organization, the EUB has not just been swept along with the tide of change; we have been proactive in transforming our business and improving the existing regulations to protect the public. Our vision is to continue to build a regulatory framework that inspires public confidence. There is no better example of our commitment to this than the Public Safety and Sour Gas project.

***In our first year, the EUB has completed work on 14 recommendations and work is continuing on 35 more. This year we plan to start work on another 16 recommendations. This leaves 22 recommendations to be started in total.***
Source: EUB Public Safety Implementation Team

Albertans have clearly stated their concerns about sour gas development, while many also recognize its importance to the Alberta economy. The EUB and the petroleum industry have heard and acknowledged both these viewpoints. The EUB remains firmly committed to building on the work started under the project. The changes we are making will result in a fundamental cultural shift in Alberta's sour gas industry.

Consider this: over the years Canadian businesses have adopted increasingly favourable environmental policies, so much so that these practices have become a core part of the way we do business. Although this shift in attitude has taken a long time, we are now implementing measures that not only benefit our current situation, but will benefit future generations.

***In 1974, there were about 24 000 wells* and some 70 companies in Alberta. Today there are over 150 000 wells and more than 1200 companies.***
*Includes capped wells

In a similar way, I believe that as the EUB works to address the sour gas recommendations, attitudes are changing in the public sector and the petroleum industry. Stakeholders are beginning to see the impact that greater public involvement is having on sour gas development and therefore public consultation is becoming an important consideration for any sour gas proposal or operation. This is the fundamental cultural shift in the sour gas industry that I have spoken about.

***In 1974, the population of Alberta was just under 1.7 million. Today it is nearly 3 million.***
Sources: EUB Library, Alberta Municipal Affairs

Our objective is to provide a more consistent, comprehensive set of regulations that will benefit the public, industry, and the EUB in our mission to ensure that the discovery, development, and delivery of Alberta's energy resources take place in a manner that is fair, responsible, and in the public interest. I believe that stakeholder engagement is vital to achieving our mission. I am encouraged by industry's continuing efforts to foster relationships with the public and build a cooperative approach to sour gas developments. The EUB's primary role as regulator is to ensure public safety, and we will continue to make decisions based on this priority.

## Recommendations on Public Safety and Sour Gas

In January 2000, the EUB formed the Provincial Advisory Committee on Public Safety and Sour Gas to examine Alberta's sour gas regulatory system and consult with Albertans on issues surrounding sour gas development. After a year of review and consultation with key stakeholders, the Advisory Committee reported its findings.

While acknowledging that Alberta has an already extensive and comprehensive oil and gas regulatory system, the Advisory Committee identified other areas where further improvements could be made and raised 87 recommendations. In addition to these mandated recommendations, the Advisory Committee noted several other nonmandated but important issues, some of which are already being addressed as part of ongoing projects inside and outside the EUB.

The EUB pursued these findings and immediately made a commitment to allocate the necessary resources to address all 87 recommendations. An implementation team of senior decision-makers was formed to oversee the work. The team, with assistance from many EUB branches, developed an action plan for the first year of work. This plan was taken back to the communities originally approached by the Advisory Committee to give stakeholders an opportunity to provide feedback. We wanted to ensure we had set the right priorities with regard to the Advisory Committee's recommendations.

*The recommendations of the Advisory Committee covered a diverse range of issues. The EUB assigned each of the recommendations to one of five subject areas:*

- *Health Effects and Sour Gas Research*
- *Sour Gas Development Planning and Approval*
- *Sour Gas Operations*
- *Emergency Preparedness*
- *Information, Communication, and Consultation*

***Within each of the subject areas, many of the recommendations had a common theme and were grouped together for addressing as a single project.***

Source: EUB Public Safety Implementation Team

## What We Have Achieved

Last year we set ambitious but realistic targets, and we have achieved much more than what we set out to do; however, there is still more to be done! I am proud of the commitment demonstrated by EUB staff on the Public Safety and Sour Gas initiative in starting work on 49 of the 87 recommendations. To date we have completed 14 recommendations and are continuing work on 35. This year we will be starting work on an additional 16 recommendations, leaving only 22 to be addressed.

I also commend the work that Alberta Health and Wellness and Alberta Environment have undertaken on health effects and air monitoring matters. This work is very important because it feeds into many other related projects.

Our first year of work has been very challenging. Many of the recommendations on which we have taken action required extra effort to fulfill their intent and to deal with further issues identified as the work progressed. In some cases, work on one or more recommendations was combined under a single project, while in other cases the project team had to start work earlier than scheduled, because of its dependency on other recommendations.

I promised to keep you updated on more specific progress with regard to the PS&SG project, so I have highlighted some key accomplishments in each of the five recommendation categories. Full details on all the project work to date is available in the Public Safety and Sour Gas Annual Progress Report. This is available from EUB Information Services (403-297-8190) or on our Web site <www.eub.gov.ab.ca>.

## Health Effects and Sour Gas Research

A comprehensive review and analysis of the health effects from exposure to hydrogen sulphide ($H_2S$) and sulphur dioxide ($SO_2$) is under way. A multidisciplinary committee of experts is guiding the work, which will result in Alberta Health and Wellness updating the provincial health effects tables.

Alberta Health and Wellness is also leading an initiative to develop a personal monitor capable of detecting low levels of $H_2S$. Significant progress has been made with the development of a prototype scheduled to be field tested shortly. The information that can be gathered from the personal monitor, in conjunction with other biological and health data collected on individuals, will be useful in establishing the relationship between exposure to $H_2S$ and the effects on health.

***In 2001, EUB staff facilitated 115 landowner/company disputes. Of these, we were successful in achieving full resolution in 98 cases.***

***Of those who provided feedback, 97% said they would participate in ADR again.***

Sources: EUB *ADR Annual Report 2001*; EUB *Regulatory Highlights 2000*.

The work currently under way is vital to support other initiatives, including a review of how we determine an emergency planning zone, evacuation criteria, and setback distances.

Sour gas producing areas in Alberta

Source: EUB Compliance and Operations Branch

## Sour Gas Development Planning and Approval

The EUB now performs a detailed review of each critical sour well application prior to granting a licence. As part of the review, we ensure that the required safety standards have been achieved and a comprehensive emergency response plan is in place.

We are also considering further changes to the application process that would require increased disclosure of project area and development plans. Our aim is to promote a more open discussion among all stakeholders regarding sour gas development within their communities.

I firmly believe that an early dialogue with stakeholders can reduce many of the concerns surrounding sour gas development. I am pleased to report on the success of the EUB Appropriate Dispute Resolution (ADR) program, which brings together all the parties involved to discuss concerns at the application stage. In this process, the EUB often acts as the facilitator among stakeholders. The aim is to build trust and to resolve the issues in a way that recognizes the interests of all concerned. If ADR is successful, then it is possible to avoid lengthy and adversarial public hearings. Part of ADR implementation has involved the training of EUB staff throughout the province in effective facilitation.

## Sour Gas Operations

Inspection and enforcement are important tools that the EUB uses to protect the public. We have immediately acted on the Advisory Committee's findings by modifying our field inspection procedures to improve the measures already in place.

We have increased our inspection frequency of all sour gas operations. This includes inspecting all critical sour wells at least once during drilling. We focus more on new operators and operators with a history of regulatory noncompliance. EUB inspectors are now making increased contacts with residents to discuss the inspection results for nearby sour gas operations. We have also recruited and trained additional inspectors to meet the demands of the new procedures.

Sour gas complaints are treated very seriously and therefore addressed immediately. We also make sure we follow up on every complaint to inform the complainant of the action we have taken.

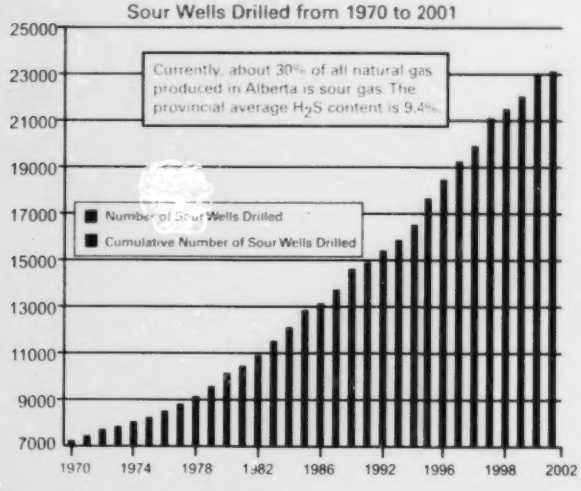
***EUB field staff now inspects all critical sour wells at least once during drilling.***

Source: EUB Field Surveillance Branch.

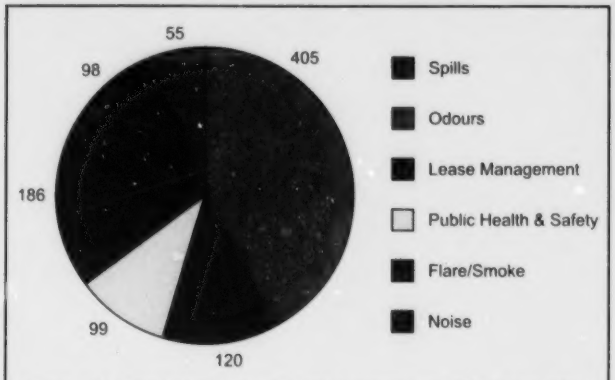
I am pleased to report that we have purchased additional mobile air monitoring equipment to increase our capability to monitor ambient air quality and to better respond in the event of a complaint or an emergency.

I believe the measures we have implemented demonstrate the EUB's commitment to making sure that sour gas operations are conducted in a safe way. Furthermore, I consider it important that we continue to openly communicate our surveillance information to the public.

Sour Wells Drilled from 1970 to 2001




Complaints by Issue 2000/2001




Source: EUB *Field Surveillance Provincial Summary*, April 2000/March 2001.

## Emergency Preparedness

Sour gas operations are already being conducted in accordance with strict requirements and safeguards to protect the public in an emergency. However, the EUB continues to develop better procedures to check industry's capability to respond to emergencies.

***In 2001, the EUB reviewed 481 site-specific emergency response plans.***

***The new emergency management guide will consolidate nine EUB interim directives and informational letters into a single set of requirements.***

Source: EUB Compliance and Operations Branch.

We have produced a comprehensive draft emergency management guide to provide clearer direction to the industry and public on what is required. This guide is currently under review by stakeholders for their feedback.

As an interim policy, the EUB has implemented a clarification to the current approval process for emergency response plans, the determination of calculated emergency planning zones, and the criteria for use of reduced emergency planning zones.

We have also made significant progress in developing a screening hazard and risk analysis protocol to provide a modelling standard for the calculation of emergency planning zones. A draft protocol is currently undergoing stakeholder review. This work will form the basis of the emergency planning zone and setback review, which we plan to start early next year.

## Information, Communication, and Consultation

The EUB is committed to improving both information access and communication opportunities as part of the regulatory framework. However, we are not only concerned with how others build lasting and productive relationships; we are also looking at ways to improve our own consultation procedures with our stakeholders.

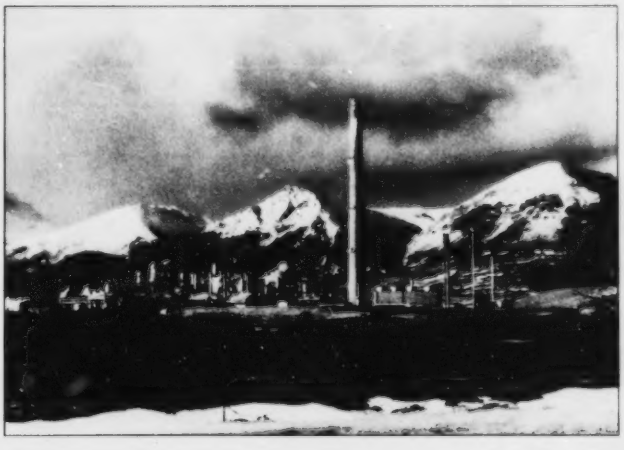
The Advisory Committee recognized the need for the public to have better access to information. We have responded by beginning the development of an Internet-based system that will allow multiple layers of information to be displayed over a map of Alberta. The system is currently in pilot stages.

***A revised Guide 29 and companion brochure will help potential participants in EUB hearings better understand the process.***

Source: EUB Law Branch

I believe we are continuously improving our communications strategy. To this end, we have created several tools that are having a positive impact. For instance, a short video on the role of the EUB has been completed and is being shown at EUB open house presentations across the province. Eventually it will become part of a longer video about the EUB and our role in energy development in Alberta.

In November 2001, our efforts in public consultation was acknowledged through an award for Community Consultation from the International Institute of Petroleum in London, England.



***In the last 12 months the EUB held four open houses:***

- ***High Level***
- ***Midnapore***
- ***Rocky Mountain House***
- ***Pincher Creek***

***Total participation, including EUB staff and stakeholders, was 442.***

Source: EUB Communications Branch

## The Way Ahead

Addressing all of the Advisory Committee's recommendations on Public Safety and Sour Gas is just the first phase of improving the current standards on public health and safety and on the environment. The challenge the EUB faces is to continue to review business practices so that regulations keep pace with both the current needs and interests of the public, and technological advances in industry. I therefore continue to challenge the sour gas industry to undertake its business in a manner that is mindful of public needs.

I believe the work we are doing on sour gas today will impact the petroleum industry as a whole. Increasing public involvement and ADR implementation are examples of practices that should be applied beyond the scope of sour gas to all energy developments.

The EUB recognizes that energy resources and revenues are important to the people of Alberta, but they will never outweigh public safety. For the EUB to find that an energy development project is in the public interest, it must be convinced that public safety can be adequately protected.

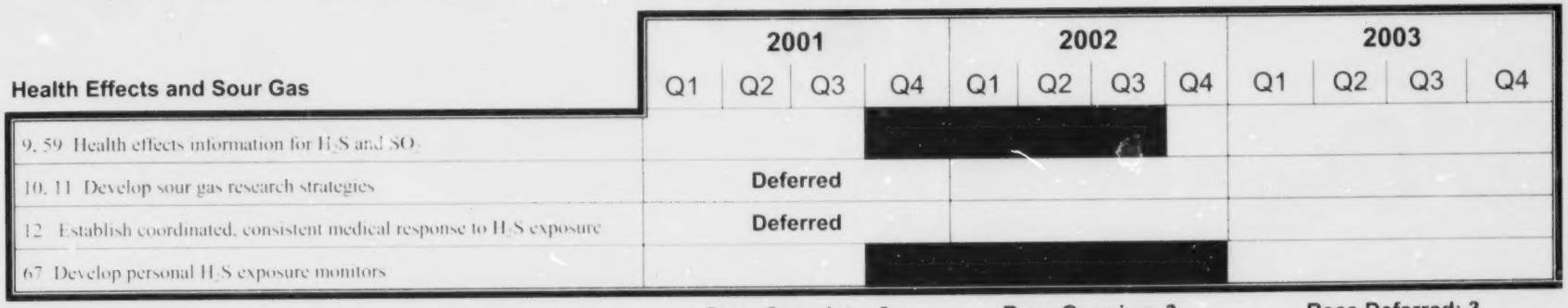
We are committed to having an open and transparent working relationship with all stakeholders and always welcome your comments, questions and suggestions on any of our initiatives. The path forward will not always be smooth and easy. Obstacles will have to be overcome, and we count on all our stakeholders to help make the Public Safety and Sour Gas project a success.

Thank you for taking the time to read my update. I trust you believe, as I do, that we are moving toward an improved and streamlined regulatory framework in Alberta that reflects a cooperative effort among stakeholders, while maintaining rigorous safeguards to public health and safety.

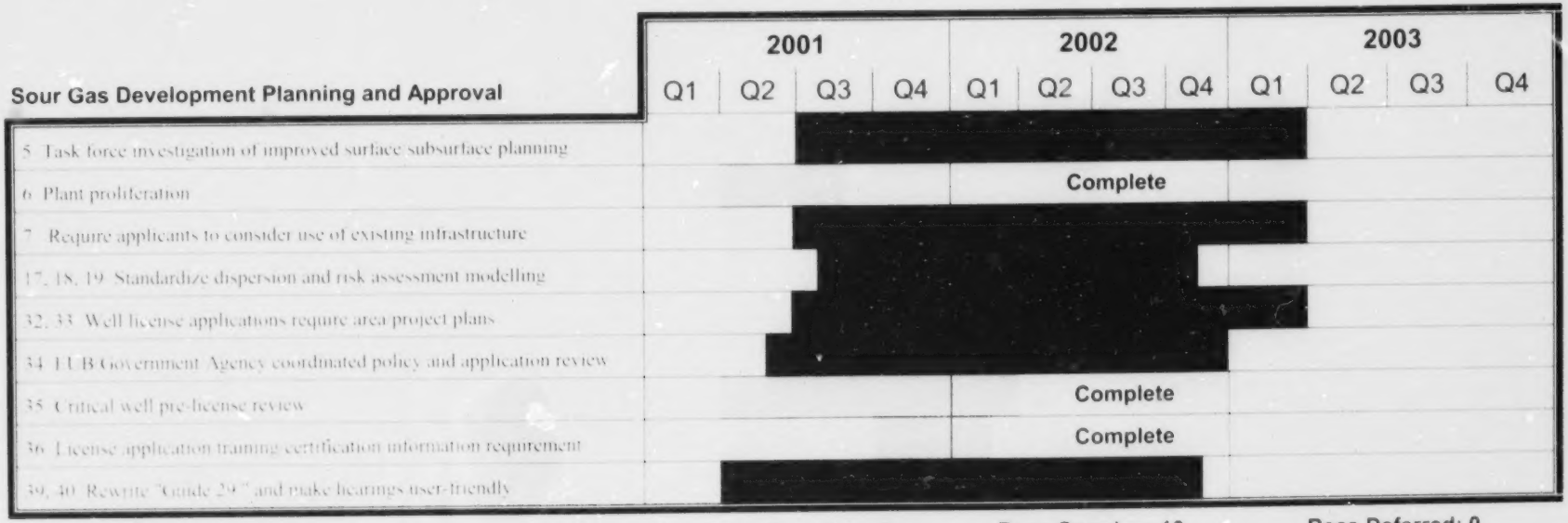
**Neil McCrank**
Chairman, Alberta Energy and Utilities Board

## Public Safety and Sour Gas
## Project Schedule by Recommendation Category

### Year One Starts (Calendar Year Quarters)


Health Effects and Sour Gas
2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
9, 59 Health effects information for H2S and SO2
10, 11 Develop sour gas research strategies
Deferred
12 Establish coordinated, consistent medical response to H2S exposure
Deferred
67 Develop personal H2S exposure monitors

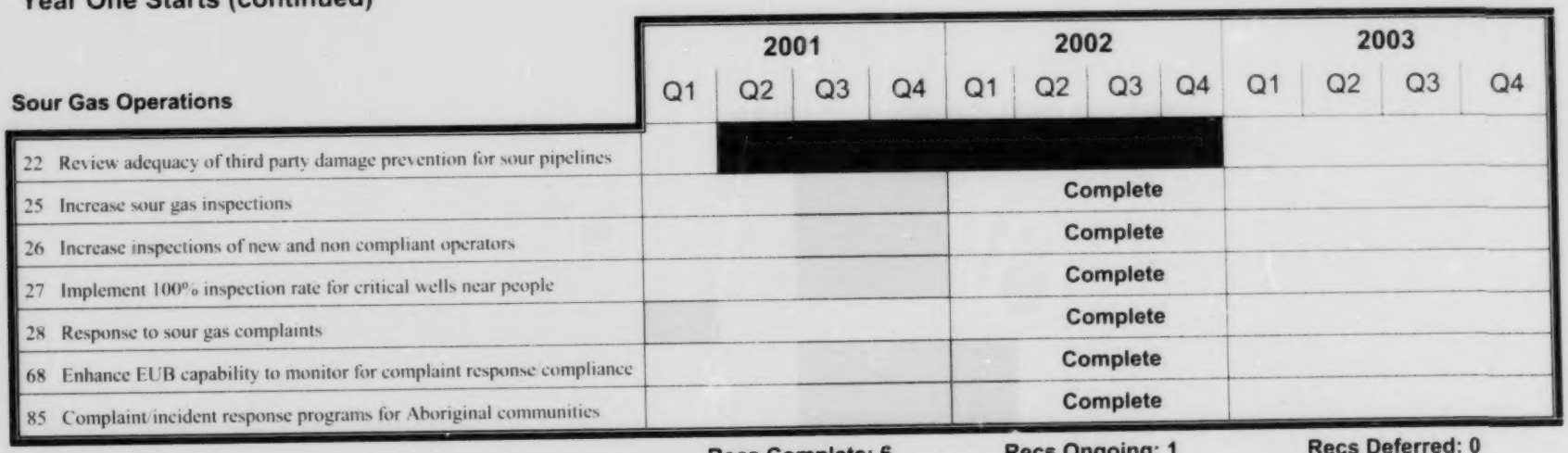
**Recs Complete: 0** **Recs Ongoing: 3** **Recs Deferred: 3**


Sour Gas Development Planning and Approval
2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
5 Task force investigation of improved surface subsurface planning
6 Plant proliferation
Complete
7 Require applicants to consider use of existing infrastructure
17, 18, 19 Standardize dispersion and risk assessment modelling
32, 33 Well license applications require area project plans
34 EUB/Government Agency coordinated policy and application review
35 Critical well pre-license review
Complete
36 License application training certification information requirement
Complete
39, 40 Rewrite "Guide 29" and make hearings user-friendly

**Recs Complete: 3** **Recs Ongoing: 10** **Recs Deferred: 0**

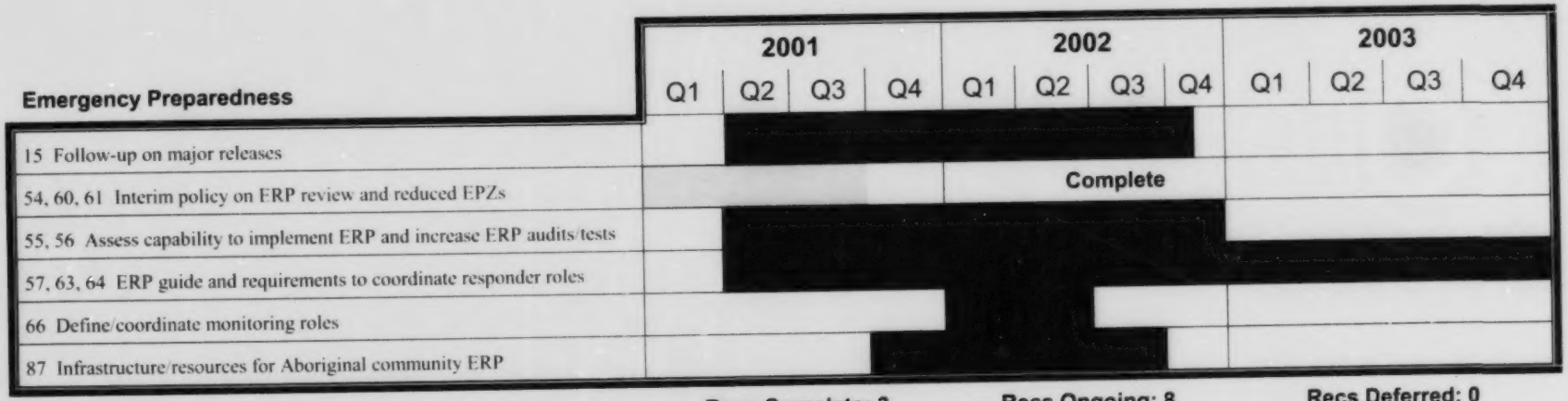
## Year One Starts (continued)

### Sour Gas Operations


2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
22 Review adequacy of third party damage prevention for sour pipelines
25 Increase sour gas inspections
26 Increase inspections of new and non compliant operators
27 Implement 100% inspection rate for critical wells near people
28 Response to sour gas complaints
68 Enhance EUB capability to monitor for complaint response compliance
85 Complaint/incident response programs for Aboriginal communities
Complete
Complete
Complete
Complete
Complete
Complete

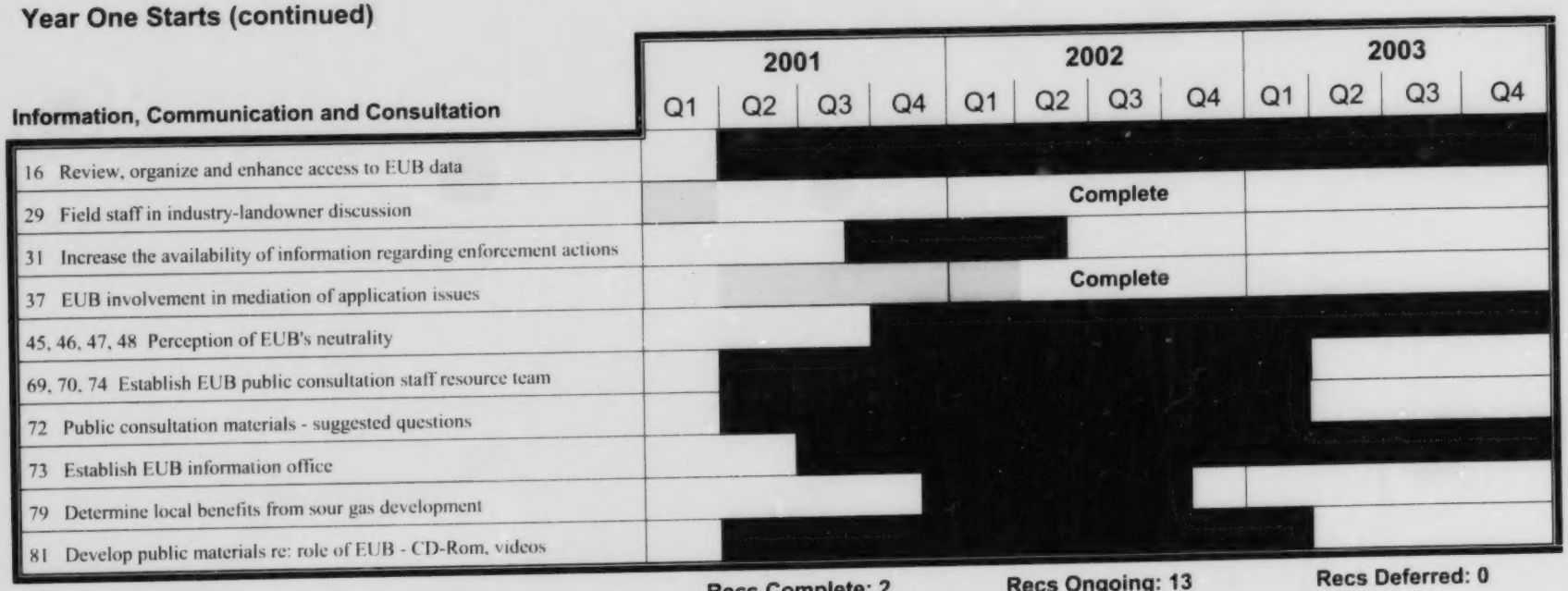
**Recs Complete: 6** **Recs Ongoing: 1** **Recs Deferred: 0**

### Emergency Preparedness


2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
15 Follow-up on major releases
54, 60, 61 Interim policy on ERP review and reduced EPZs
55, 56 Assess capability to implement ERP and increase ERP audits/tests
57, 63, 64 ERP guide and requirements to coordinate responder roles
66 Define/coordinate monitoring roles
87 Infrastructure/resources for Aboriginal community ERP
Complete

**Recs Complete: 3** **Recs Ongoing: 8** **Recs Deferred: 0**

## Year One Starts (continued)

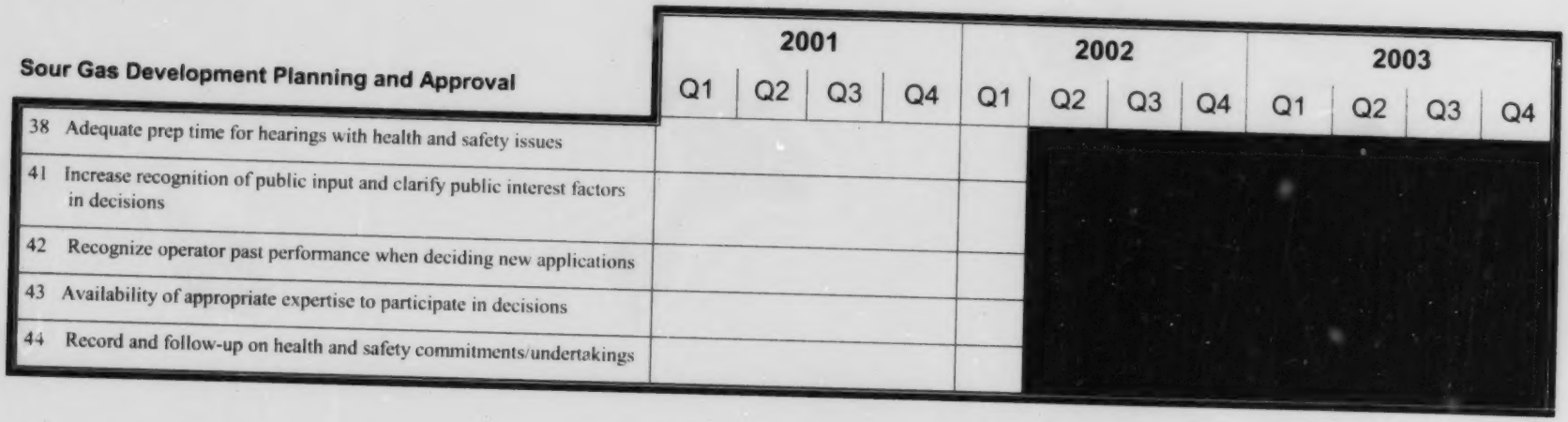

Information, Communication and Consultation
2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
16 Review, organize and enhance access to EUB data
29 Field staff in industry-landowner discussion
Complete
31 Increase the availability of information regarding enforcement actions
37 EUB involvement in mediation of application issues
Complete
45, 46, 47, 48 Perception of EUB's neutrality
69, 70, 74 Establish EUB public consultation staff resource team
72 Public consultation materials - suggested questions
73 Establish EUB information office
79 Determine local benefits from sour gas development
81 Develop public materials re: role of EUB - CD-Rom, videos

**Recs Complete: 2** **Recs Ongoing: 13** **Recs Deferred: 0**

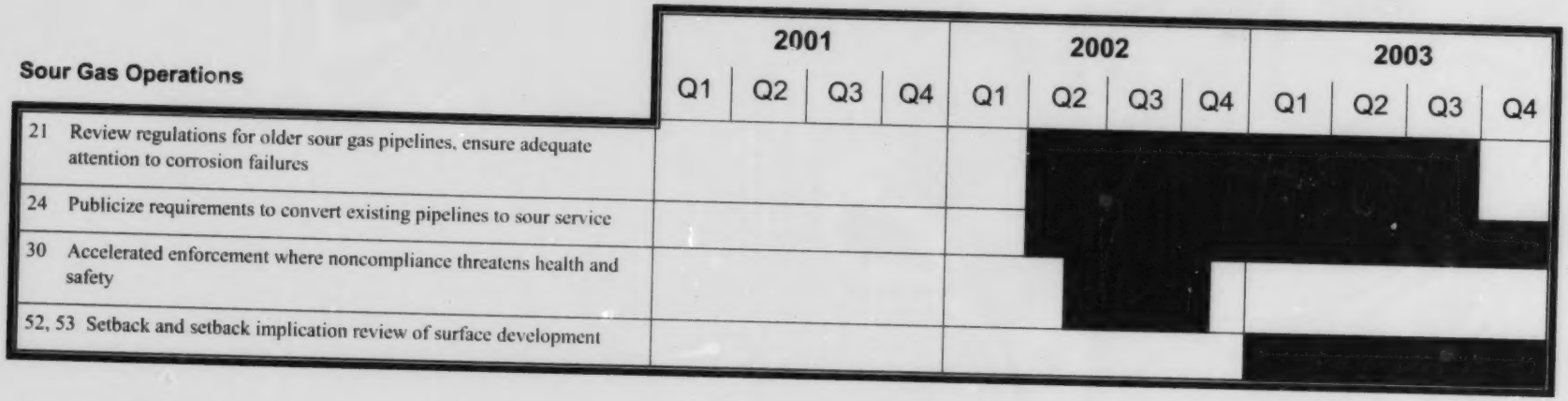
**TOTALS:** **Recs Complete: 14** **Recs Ongoing: 35** **Recs Deferred: 3**

## Year Two Starts

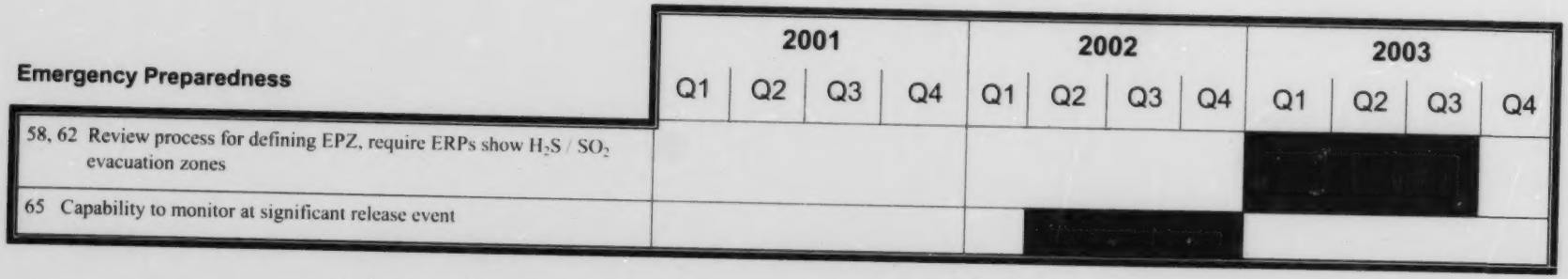
### Sour Gas Development Planning and Approval

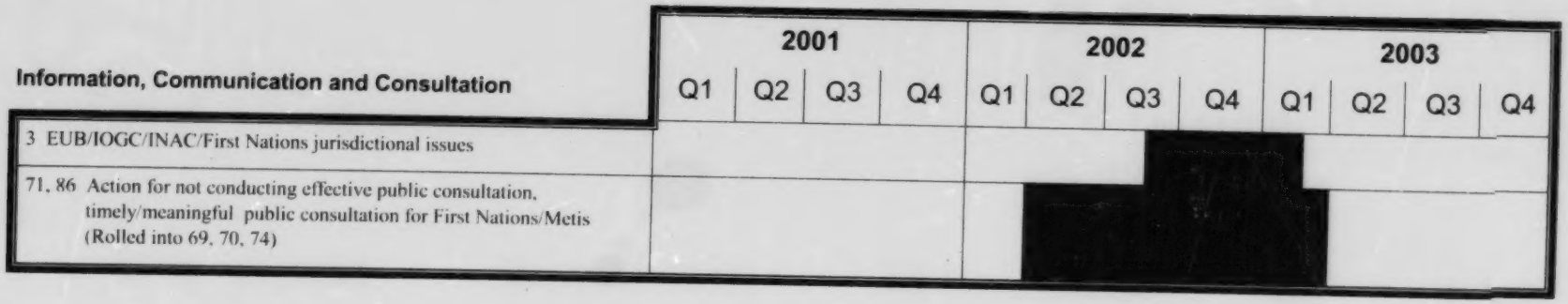

2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
38 Adequate prep time for hearings with health and safety issues
41 Increase recognition of public input and clarify public interest factors in decisions
42 Recognize operator past performance when deciding new applications
43 Availability of appropriate expertise to participate in decisions
44 Record and follow-up on health and safety commitments/undertakings

### Sour Gas Operations


2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
21 Review regulations for older sour gas pipelines, ensure adequate attention to corrosion failures
24 Publicize requirements to convert existing pipelines to sour service
30 Accelerated enforcement where noncompliance threatens health and safety
52, 53 Setback and setback implication review of surface development

## Year Two Starts (continued)


Emergency Preparedness
2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
58, 62 Review process for defining EPZ, require ERPs show $H_2S$ / $SO_2$ evacuation zones
65 Capability to monitor at significant release event


Information, Communication and Consultation
2001
2002
2003
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
3 EUB/IOGC/INAC/First Nations jurisdictional issues
71, 86 Action for not conducting effective public consultation, timely/meaningful public consultation for First Nations/Metis (Rolled into 69, 70, 74)

**TOTALS:** **16 New Starts**

## Background

Sour gas is natural gas that contains hydrogen sulphide ($H_2S$), a colourless flammable compound that has a distinctive "rotten egg" smell. Approximately one-third of Alberta's natural gas production is considered sour. The province's production makes up about 80% of Canada's total natural gas production, and so a considerable portion of Canada's accessible natural gas is sour.

Gas containing $H_2S$ is poisonous to animals and humans in relatively low concentrations. Albertans have clearly stated their concerns over sour gas development, while many also recognize its importance to Alberta's economy. The increasing global demand for natural gas means that more and more Albertans are being presented with proposed sour gas developments in and around their communities.

The Alberta Energy and Utilities Board (EUB) has heard the publics concerns and in January 2000 formed the **Provincial Advisory Committee on Public Safety and Sour Gas (Advisory Committee)** to review the regulatory system for sour gas as it relates to public health and safety. All major stakeholders (public, industry, government, and others) were represented on this 22-member committee, as an extensive outreach program was undertaken to gather information from Albertans residing in sour gas development areas.

Based on the input received, the Advisory Committee made 87 recommendations to the EUB for improving the regulatory processes and the understanding of sour gas. The *Public Safety & Sour Gas Findings and Recommendations Final Report*[1] was published in December 2000.

Upon receiving the recommendations of the Advisory Committee, the EUB immediately established the **Public Safety Implementation Team (PSIT)** to develop a plan of action for accomplishing these tasks and to coordinate on-going implementation. The recommendations were grouped into five categories:

- Health Effects and Sour Gas Research
- Sour Gas Development Planning and Approval
- Sour Gas Operations
- Emergency Preparedness
- Information, Communication, and Consultation

In April 2001 the PSIT published the *Public Safety and Sour Gas Implementation Plan: First Progress Report,*[2] proposing to start work on 50 of the 87 Recommendations in the first year of a multiyear program. PSIT was charged with undertaking this work on **Public Safety and Sour Gas (PS&SG)**. Wherever possible, PSIT grouped recommendations together to form single projects based on the similarity of the intents and/or deliverables of the recommendations. The EUB issues *Quarterly Progress Reports*[3] to keep stakeholders informed of the work under way.

[1] *PS&SG Findings and Recommendations Final Report*, Public Safety and Sour Gas Advisory Committee, December 2000. Available for download at <http://publicsafetyandsourgas.org>.

[2] *Public Safety and Sour Gas Implementation Plans,* Public Safety and Sour Gas Implementation Team, EUB, April 2001. Available for download at <http://www.eub.gov.ab.ca/bbs/public/sourgas/sourgas.htm>.

[3] *PS&SG Quarterly Progress Reports*, Public Safety and Sour Gas Implementation Team, EUB, 2001. Available for download at <http://www.eub.gov.ab.ca/bbs/public/sourgas/sourgas.htm>.

This *Public Safety and Sour Gas Annual Progress Report* is a summary of the work done on the project through March 2002. As work progressed on the recommendations, some changes were made to the original scopes; these changes are reflected in the report. Also, this document includes overviews of the planned year-two project starts and related work that is ongoing at the EUB.

Appendix 1 presents a list of acronyms and abbreviations used in the report. Appendix 2 provides the full text of the recommendations as originally presented by the Advisory Committee in December 2000.

# Health Effects and Sour Gas Research

# Health Effects and Sour Gas Research

## Overview

A total of six recommendations comprise the four projects under this category of Health Effects and Sour Gas Research. This was recognized as a key area of concern for the Advisory Committee because of its obvious scope of public interest and involvement. Therefore, work on most of the Health Effects and Sour Gas Research recommendations made by the Advisory Committee were scheduled to start in the first year of PS&SG. It was later decided that some of this work needed to be completed before other recommendations could be started, which led to deferral of three recommendations. Alberta Health and Wellness (AHW) has taken the lead role in the review and implementation of this group of recommendations. The EUB is working in conjunction with AHW to complete these recommendations as quickly as possible.

The task of reviewing current literature on $H_2S$ and sulphur dioxide ($SO_2$) health effects has been more time consuming than originally anticipated, therefore extending the completion date by six months. The health effects review under Recommendations 9 and 59 involved the creation of a multistakeholder expert committee to evaluate current health tables on $H_2S$ and $SO_2$ exposure. The committee established a terms of reference for its task, and AHW engaged a consultant to undertake the review of current $H_2S$ and $SO_2$ health effects literature. These findings will be reviewed by the expert committee and provided to AHW for its consideration. The EUB will then rely on this information from AHW to review the requirements for emergency planning zones, setbacks, and evacuation criteria.

The analysis of the health effects tables also impacts work required to address three other health effects recommendations:

- Recommendations 10 and 11, development of sour gas research strategies, were scheduled to start in the first year of PS&SG but have now been deferred. AHW anticipates that the deliverables from Recommendations 9 and 59 will focus the discussions on these recommendations.
- Recommendation 12, development of a coordinated and consistent medical response to $H_2S$ exposure, is also impacted by the results of Recommendation 9. As a result, work could not begin in the first year of PS&SG. However, once available, the recommendations of the expert advisory committee will be considered when addressing Recommendation 12.

Progress has been made on Recommendation 67 regarding $H_2S$ monitoring. A project team established by AHW assessed the technology available for monitoring $H_2S$ exposure and determined that no existing equipment met its needs. The project team then determined that it would be possible to develop a portable and very sensitive $H_2S$ monitor. A consultant was hired to assist AHW in developing a personal $H_2S$ exposure monitor; the device is currently under test and showing promising results.

## Recommendations 9 and 59: Health Effects Information for $H_2S$ and $SO_2$

*The EUB work with AHW, regional health authorities (RHAs), Alberta Environment (AENV), Alberta Human Resources (AHR), industry, and other stakeholders to ensure that comprehensive health effects information (qualitative and quantitative) is developed, as soon as practical due to its urgency.*

*The EUB work with AHW, RHAs, and other stakeholders to develop clear requirements and evacuation criteria to address the hazard of $SO_2$ as a result of ignition.*

### Intent

Ensure that comprehensive health effects information is developed. Review the current extent of knowledge regarding the health effects associated with exposure to $H_2S$ and $SO_2$.

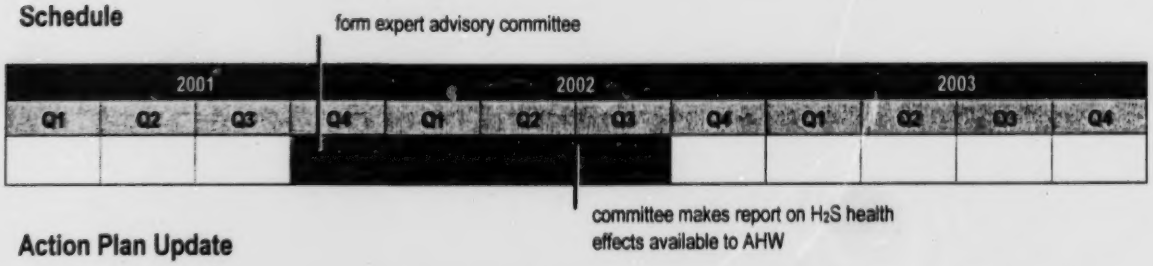
### Lead Agency/Branch

AHW

### Stakeholders

AENV, RHAs, AHR, Canadian Association of Petroleum Producers (CAPP), Small Explorers and Producers Association of Canada (SEPAC), Alberta universities

### Schedule




### Action Plan Update

The first task in meeting the intent of Recommendations 9 and 59 was for AHW to establish a multistakeholder expert advisory committee to evaluate the current health effects literature on $H_2S$ and $SO_2$. A consultant has been retained to review the current literature on $H_2S$ and $SO_2$ health effects and report to the committee.

There were delays in establishing the terms of reference for this project, as the potential impacts on resources to fulfill the project scope involved considerable debate and resolution. For example, the committee discussed at length the criteria that would be used to complete the work.

The consultant's report will be used by AHW to revise $H_2S$ and $SO_2$ health effects tables. The EUB will use these revised tables in addressing the recommendations on standardized dispersion modelling, emergency response planning, and setbacks (Recommendations 17, 18, and 19; 55 and 56; 52 and 53; 58 and 62; 57, 63, and 64; and 87). The results of this work will be included in the forthcoming EUB *Emergency Management Guide*.

The table below lists action items associated with Recommendations 9 and 59.

| Completed | Current | Future |
|---|---|---|
| Form expert advisory committee | Committee review $H_2S$ and $SO_2$ data | Committee present findings to AHW |
| Create terms of reference | Update health effects table | |
| Work plan established and finalized | | |

## Deliverable

The key deliverable for this recommendation is the updated $H_2S$ and $SO_2$ health effects table from AHW.

## DEFERRED

## Recommendations 10 and 11: Develop Sour Gas Research Strategies

*The EUB, AHW, AENV, Alberta Agriculture, Food and Rural Development, Alberta Research Council, RHAs, Industry, and other interested parties, including Alberta universities, jointly establish an independent Scientific Review and Advisory Committee to provide recommendations on required research programs related to sour gas and health.*

*The EUB work with the Alberta Government to ensure financial support is available to address gaps in research respecting the health effects of sour gas. Such research should complement the multi-government Western Canada Study on Animal and Human Health Effects Associated with Exposure to Flare Emissions.*

### Intent

Ensure that research related to sour gas and human health takes place.

| Lead Agency/Branch | Stakeholders |
|---|---|
| AHW | AENV, AAFRD, ARC, RHAs, Innovation and Science, CASA, CAPP, SEPAC, Alberta universities |

### Schedule

The schedule for Recommendations 10 and 11 cannot be estimated at this time, as work has not started.

### Action Plan Update

The work to address these recommendations was scheduled to start during the first year of PS&SG. However, the start of this work has been deferred until the review of the health effects data (Recommendations 9 and 59) has been completed. Once the findings from this work are available, the health effects research can be identified.

### Deliverables

The key deliverables for Recommendations 10 and 11 will be established once the review of the health effects data is complete.

## DEFERRED

## Recommendation 12: Establish Coordinated, Consistent Medical Response to $H_2S$ Exposure

*AHW work with RHAs and physicians, through the Alberta Medical Association, to ensure a consistent, appropriate, and coordinated response to individuals exposed to major $H_2S$ releases.*

### Intent

Provide a 24-hour, 7-day-per-week medical information response for individuals exposed to a high dose of $H_2S$. Medical professionals would use this service in the treatment of $H_2S$ exposure.

| Lead Agency/Branch | Stakeholders |
|---|---|
| AHW | RHAs, Alberta Medical Association, Poison Control Centre |

### Schedule

The schedule for Recommendation 12 has not yet been developed.

### Action Plan Update

The work to address this recommendation was scheduled to start during the first year of PS&SG. However, it has been deferred until the review of the health effects data (Recommendations 9 and 59) has been completed. Once these findings are available, a coordinated and consistent medical response to $H_2S$ exposure can be established. The plan will involve

- AHW working with RHAs and the Alberta Medical Association to review the possibility of establishing response capability, likely through the Poison Control Centre;
- ensuring that information is current and updated when it becomes available; and
- determining if further equipment and research are needed for treatment and detection of $H_2S$ exposure.

### Deliverable

The key deliverable for Recommendation 12 is the creation of a coordinated and consistent procedure for medically responding to $H_2S$ exposure.

## Recommendation 67: Develop Personal $H_2S$ Exposure Monitors

*The EUB, with the assistance of industry and researchers, promote and support the development of exposure monitors that can be used to measure personal exposure of the public to sour gas-related substances in a practical manner.*

### Intent

In order to address health concerns and issues and to expand knowledge of health effects, develop a reliable personal monitor capable of measuring low-level exposures to $H_2S$. Develop plans and protocols for how and when these monitors would be used and how the data collected would be reported and used.

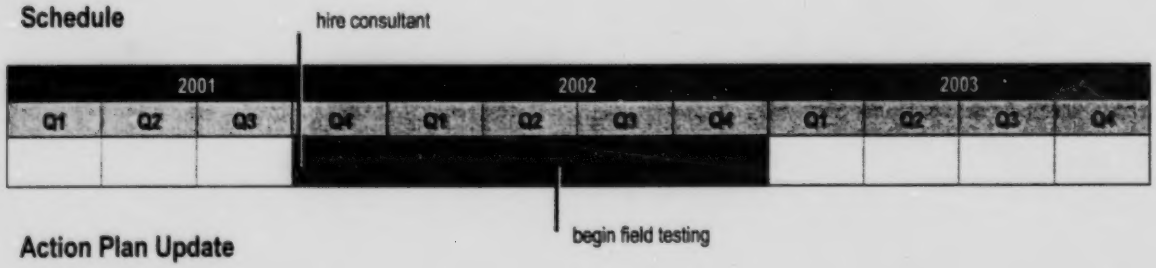
### Lead Agency/Branch

AHW

### Stakeholders

AENV, AHR, CAPP, SEPAC

### Schedule




### Action Plan Update

The project team first undertook an assessment of existing tools and was able to identify gaps in current technology. In order to fulfill the intent of Recommendation 67, a consultant was hired to develop a portable $H_2S$ personal exposure monitor. A prototype unit has been developed and lab tested. An advanced prototype unit will be field tested shortly.

The table below shows completed, current, and future action items associated with Recommendation 67.

| Completed | Current | Future |
|---|---|---|
| Assess available technology | Lab testing on monitor | Test monitors in the field |
| Hire consultant to develop a portable personal $H_2S$ monitor | | |

### Deliverable

The key deliverable for this recommendation is the development and use of portable personal $H_2S$ monitors in the field.

# Sour Gas Development Planning and Approval

# Sour Gas Development Planning and Approval

## Overview

Under the Sour Gas Development Planning and Approval category, there are nine projects that include 13 recommendations.

In general, the Advisory Committee found that a lack of consistency exists in the amount and type of detail provided on sour gas applications to the EUB. Applicants were found to be submitting separate applications for related facilities and sites on a piecemeal basis, when it might be possible to submit linked applications. This would improve stakeholder understanding of area development plans. On the whole, requiring more detail about facility and area planning during the application process enhances the EUB's ability to review applications in a timely manner and streamlines the operator's interactions with local government agencies, the public, and other stakeholders.

Stakeholder engagement formed a large portion of project development for all recommendations under this category. The EUB wanted to ensure that any changes to current processes would meet the intent of the recommendations.

When the Advisory Committee recommendations were published in December 2000, the EUB Applications and Compliance and Operations Branches were already involved in a review of applications and development planning procedures. They are committed to constant development and improvement in these areas. As a result, several of the projects identified have been completed (Recommendations 6, 35, and 36).

Many of the changes already implemented to address the recommendations under the Sour Gas Development Planning and Approval category will be incorporated into a revised *Guide 56: Energy Development Application Guide*, which is scheduled for publication in March 2003.

For example, the revised guide will include the new sulphur recovery guidelines that have been issued as an EUB interim directive (*ID 2001-03*) and replace guidelines that have been in effect since 1988. Recommendation 6 required that the EUB look at how a more effective use of existing infrastructure could be applied to sour gas development to reduce redundancy in sour gas operations and plant proliferation. The new ID requires that alternatives to constructing new facilities be evaluated before new applications are approved. Additionally, in order for the EUB to approve new applications, an operator must be able to demonstrate that significant social or environmental net benefits result from a new facility in the area.

The draft protocol for *Screening Hazard and Risk Analysis* has been published and distributed to stakeholders for feedback in response to Recommendations 17, 18, and 19. The aim is to standardize risk assessment and dispersion modelling requirements for sour gas operations. A companion workbook/user guide will be published in conjunction with the finalized protocol, currently planned for October 2002.

Under Recommendation 34, the Advisory Committee intended to ensure that operators involve the appropriate RHAs and local government agencies at the application and planning stages to provide all responsible parties with the opportunity for input into sour gas policy, processes, and applications. Discussions are ongoing between project team members at the EUB and stakeholders on exactly how the existing application process can be streamlined to involve all interested parties at an earlier stage. The solution will likely involve agreement on policy development protocol and more complete application disclosure by the operator. Changes to the application requirements will be incorporated into the revised *Guide 56*.

Recommendation 35 involves changes to the critical sour facility application process to ensure that all critical sour well applications are reviewed prior to approvals being issued. By April 2001, the application process review was already completed and changes were made.

In response to Recommendation 36, the EUB reviewed the current training, certification, and design requirements for drilling and completion of critical sour wells. In terms of EUB training and certification requirements, the EUB Applications Branch conducts a detailed preapproval review of all critical wells. The review is based on *ID 97-6: Sour Well Licensing and Drilling Requirements* and the Canadian Petroleum Safety Council's *IRP Vol. 1: Drilling Critical Sour Wells*. Together, these documents outline the requirements and standards that industry must adhere to when planning, drilling, and completing a critical sour well. EUB staff review critical sour well licence applications prior to approval. Although the review has verified that the current process ensures the training and certification of workers involved in the applications for critical sour wells, an ongoing assessment of these qualifications is required to ensure that the standards of the day are met.

To address Recommendations 39 and 40, the EUB revised *Guide 29: Energy and Utility Development Applications and the Hearing Process* and developed a companion document, *Guide 29A: EUB Hearing Process and Local Interveners' Costs for Energy and Utility Development Applications*. The primary purpose of these documents is to assist members of the public who wish to participate in the hearing process if they feel planned sour gas development may directly and adversely affect them. Draft copies of the guides have now been forwarded to all interveners who participated in hearings over the last two years, as well as to EUB field staff and others for comment. In order to engage stakeholders during the six-month trial period of *Guide 29* implementation, the document will be provided to all interveners for upcoming hearings from March through August 2002. It is intended that the guides be finalized in the fall of 2002.

## COMPLETE

## Recommendation 6: Plant Proliferation

*Adoption by the EUB of the recommendation that there be more rigid enforcement by the EUB of its gas plan proliferation policy as presented in the report recently submitted to the EUB by the Sulphur Recovery Guidelines Review Advisory Group (SRGRAG).*

### Intent

To ensure that the EUB enforces its policies with respect to plant proliferation by requiring proponents of new sour gas processing facilities to fully evaluate alternatives to new plants in every case in terms of environmental and public impacts before applying to the EUB and that the EUB ensures that new sour gas plants are justifiable in terms of need and minimizing adverse impacts of overall sour gas development.

### Lead Agency/Branch

EUB Applications

### Stakeholders

CAPP, SEPAC, public

### Completion Statement

The EUB established the SRGRAG to provide recommendations on the proliferation of sour gas plants. Specifically, SRGRAG recommended that alternatives to constructing new facilities be thoroughly evaluated, so that no new gas processing facilities are approved within a 15 kilometre radius of an existing facility that has been or can be modified (or expanded) to receive the gas the proponent proposes to process. In support of this recommendation the advisory group cited *Interim Directive (ID) 2001-03: Sulphur Recovery Guidelines for the Province of Alberta*, which states that "applicants must clearly demonstrate to the EUB that any proposed new sour gas plant within 15 kilometres of an existing sour gas processing plant is justified in terms of social and environmental effects."

*ID 2001-03* was developed based on recommendations of SRGRAG and subsequent stakeholder consultations. The ID replaced *IL 88-13: Sulphur Recovery Guidelines—Gas Processing Operations* in August 2001. The EUB considers that the intent of Recommendation 6 regarding plant proliferation has been satisfied with the publication of *ID 2001-03*. Recommendations 7, 32, and 33 are also associated with plant proliferation and *ID 2001-03*.

### Supplemental Work

The new requirements on plant proliferation will be included in the revision to *Guide 56* in the first quarter of 2003, as well as in the application audit process. Staff will be trained to fully evaluate applications to ensure the requirements are met.

### Deliverable

The key deliverable for Recommendation 6 is *ID 2001-03*, Section 6. Related revisions to *Guide 56* will be incorporated into the *Guide 56* rewrite in the first quarter 2003.

## COMPLETE

## Recommendation 35: Critical Well Prelicence Review

*The EUB carry out a more detailed staff review of critical sour well applications immediately upon their filing and before licensing of the well. In other words, there would be no "routine" designation for critical sour well applications.*

### Intent

The EUB ensure that application processes require a thorough review of critical sour well applications against all requirements, whether or not they are going to hearing, to ensure that all requirements are being met before approvals are issued.

### Lead Agency/Branch

EUB Applications

### Stakeholders

CAPP, SEPAC, public

### Completion Statement

Previously, some critical sour well licences were issued and then subsequently audited for compliance with EUB requirements. Addressing Recommendation 35 required changes to the critical sour well application process to ensure that all critical well applications are reviewed in detail before approvals are issued. These changes were already completed when PS&SG began and are contained in *Guide 56,* published in October 2000. The EUB therefore considers that the intent of Recommendation 35 has been satisfied.

### Supplemental Work

The EUB is committed to further improving the critical sour well application process and the need for staff training as these improvements are made.

### Deliverable

The key deliverable for this recommendation is the prelicence application review, which is now included in *Guide 56.*

## COMPLETE

## Recommendation 36: Licence Application Training/Certification Information Requirements

*The EUB require information in applications for critical sour wells that demonstrates how the applicant will ensure that involved employees will be trained and certified in accordance with the standards.*

### Intent

Development of regulatory approaches that require and verify that qualified industry staff are responsible for drilling, completion, and operation of critical sour wells.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Applications | CAPP, SEPAC, Training institutions, AHR |

### Completion Statement

In response to Recommendation 36, the EUB reviewed the current training, certification, and design requirements for drilling and completion of critical sour wells. The review covered

- EUB critical sour well requirements and guidelines relating to industry staff training and certification;
- industry critical sour well standards and manuals; and
- EUB acts and regulations and related EUB guides, informational letters (ILs), IDs, and general bulletins (GBs).

In terms of EUB training and certification requirements, the Applications Branch conducts a detailed preapproval review of all critical wells, based on *ID 97-6: Sour Well Licensing and Drilling Requirements* and the Canadian Petroleum Safety Council's *ARP Vol. 1: Drilling Critical Sour Wells*. Together, these documents outline the requirements and standards that industry must adhere to when planning, drilling, and completing a critical sour well. EUB staff review all critical sour well licence applications prior to approval to ensure that the following standards and requirements for completing a critical sour well are met:

- critical sour well drilling and planning practices and standards
- critical sour well design requirements and standards
- critical sour well monitoring and safety equipment
- critical sour well certification, training, and experience for supervisory staff, rig crew, service personnel, safety specialists, and key on-site personnel
- insurance requirements
- emergency response

Recommendation 36 is related to the critical sour well preapproval process of Recommendation 35 for assurances that industry staff certifications are in place.

As well as the requirements for submitting information, the EUB also conducts inspections to assess the training and certification of workers involved with the drilling of critical sour wells.

The EUB believes that the current critical sour well information being submitted by the applicant coupled with the preapproval review process ensures that industry uses properly trained and certified staff, which satisfies the intent of this recommendation.

### Supplemental Work

Although the current safeguards in place are comprehensive and satisfy the intent of Recommendation 36, an ongoing assessment of current practices for sour gas worker training is required. The broader issue of training, certification, and knowledge of sour gas workers (not just those involved with the critical sour well application process) are addressed under Recommendation 50.

### Deliverable

There is no formal deliverable required to address this recommendation. A thorough review has been undertaken by the EUB and has verified that the current process ensures that the training and certification of workers involved in applications for critical sour wells meet the required standards. There is also an ongoing commitment by the EUB to make sure that the qualifications of critical sour well workers reflect the current standards of the day.

## Recommendation 5: Task Force Investigation of Improved Surface/Subsurface Planning

*The immediate formation of a task force of senior decision-makers that would investigate the possibility of improving coordination between subsurface and surface planning and development.*

### Intent

Reduce the immediate interface between large populations and sour gas developments, both geographically and in time, resulting in reduced conflict between sour gas development infrastructure and land surface development through improved, longer-range, and cooperative planning of both activities.

### Lead Agency/Branch

EUB PSIT

### Stakeholders

Department of Energy (DOE), CAPP (proposed), land development industry (proposed), land use planning authorities (proposed)

### Schedule

### Action Plan Update

Work on Recommendation 5 was started in June 2001, with preliminary discussions between the EUB and the DOE regarding the project scope and process.

The table below summarizes all completed and current action items associated with Recommendation 5.

| Completed | Current | Future |
|---|---|---|
| Draft terms of reference | Awaiting acceptance by EUB and DOE | Establish task force of senior decision-makers |
| | | Establish a stakeholder working committee |
| | | Assess current planning/development decision-making processes |
| | | Determine if there are possibilities for improving coordination |
| | | Propose coordinated processes for consideration by task force |

### Deliverable

Proposed approach for coordinated planning and development decisions where potential exists for conflict to occur between sour gas development and urban fringe development.

## Recommendation 7: Require Applicants to Consider Use of Existing Infrastructure

*Revisions to EUB guides to require operators to include in their applications for critical sour wells, pipelines, and facilities a review and discussion of options to utilize existing sour gas infrastructure in the area in order to minimize the extent to which the public is impacted by additional sour gas development.*

### Intent

Minimize the potential adverse environmental and public (i.e., health and safety) impacts of infrastructure used to develop sour gas resources by ensuring that operators and the EUB evaluate use of existing sour gas infrastructure before new facilities are approved.

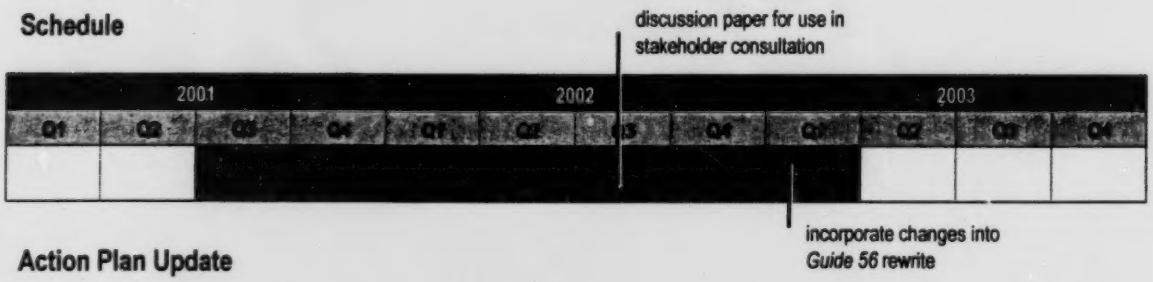
### Lead Agency/Branch

EUB Applications

### Stakeholders

CAPP, SEPAC, public

### Schedule




### Action Plan Update

It is expected that guidelines consistent with those for sour gas plants (*ID 2001-03*) will emerge from this process (see Recommendation 6: Plant Proliferation). As well, Recommendation 7 is related to Recommendations 32 and 33, which suggest that operators file multiple applications for a single area at one time to encourage area planning.

Therefore, a common regulatory document will likely be issued (an IL or ID) on utilizing existing infrastructure and planning future developments for sour gas operations. This document will be included in the *Guide 56* rewrite scheduled for the first quarter of 2003.

Having operators be responsible for investigating the reuse or reapplication of existing facilities results in a reduction of inappropriate duplication of sour gas facilities.

The table below shows all completed, current, and future action items for Recommendation 7.

| Completed | Current | Future |
|---|---|---|
| Initial draft of sour gas facility proliferation guidelines from *ID 2001-03* | Incorporate draft guidelines with a revised process for Recommendations 32 and 33 | Complete EUB consultation with industry and public |
| | | Incorporate changes into *Guide 56* rewrite |

### Deliverable

The key deliverable for Recommendation 7 is the creation of proliferation guidelines/requirements for sour gas wells, production facilities, and pipelines.

## Recommendations 17, 18, and 19: Standardize Dispersion and Risk Assessment Modelling

*The EUB, in cooperation with stakeholders, develop a framework and methodology for standardizing dispersion modelling and probabilistic risk assessment that will provide clarity to the industry and the public.*

*The EUB require that users of sour gas hazard and probabilistic risk assessment techniques clearly state their methods and assumptions.*

*The EUB be responsible for reviewing and updating its standard models and methods regularly.*

### Intent

Establish and maintain standardized criteria for use in dispersion modelling and probabilistic risk analysis.

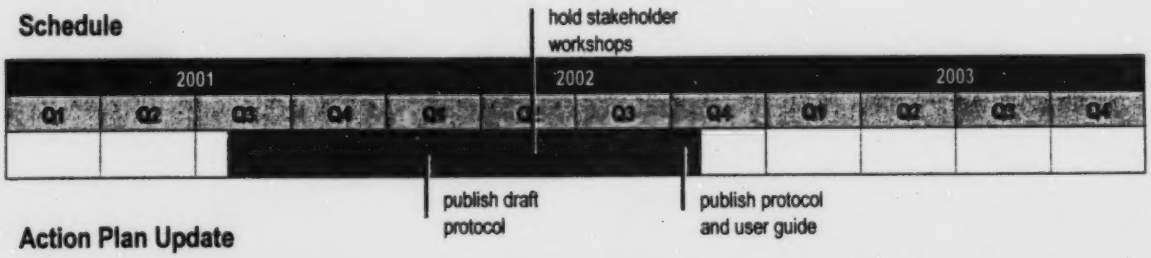
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

CAPP, SEPAC, AENV, independent experts

### Schedule




### Action Plan Update

The Advisory Committee acknowledged the usefulness of hazard and risk analysis but noted that the predictions often led to contradictory results biased to strengthen the case of a particular side at a public hearing. This variability in results originates from an abundance of modelling assumptions being applied to a well-defined science—a mixture giving no uniquely right answer but with the potential for many wrong answers. Inevitably, this situation degenerates into a debate of experts, often confusing the public and eroding the confidence in the value of performing a hazard and risk analysis in the first place.

The project objective is to define criteria for application in dispersion and risk analysis models. These criteria would include input parameters, model methodologies, and the conditions for use. The original intent for phase 1 was to develop an interim protocol based on the current methodology for dispersion modelling and risk analysis. The aim was not to undertake a detailed review of the approaches being used by other jurisdictions or to perform exhaustive research on the latest modelling theories. These more in-depth studies were to be conducted during the second phase of the project. As the project progressed, it became obvious that the only way to avoid inconsistent results is to use a protocol based on a screening hazard and risk analysis. This approach would require defining a series of realistic worst cases, the inputs, and the modelling assumptions to be used. Consequently, the scope of the project was expanded to develop the draft protocol for *Screening Hazard and Risk Analysis*.

The draft protocol includes default emergency planning zones (EPZs) to replace existing nomographs for wells and pipelines. The default EPZs will be based on realistic worst-case scenarios and conservative modelling assumptions, and in many situations these defaults will be suitable for the purposes of emergency

response planning. However, in some situations (e.g., where there are many people within the default EPZ) a refined screening hazard analysis might be required. The draft protocol also defines a screening risk analysis and includes failure probabilities based on a review of the latest EUB data. All the tools (i.e., computer codes and spreadsheet) necessary to undertake both the refined screening hazard and screening risk analyses will be available on the EUB Web site. There will also be an accompanying workbook with example cases. It will be permissible under the terms of the protocol for an operator to submit an alternative hazard and risk analysis as part of its licence application. The rationale behind allowing the use of alternate analyses is to account for site-specific modelling of sour gas developments and to ensure that advances in science can be applied with appropriate justification. However, if an alternative analysis is submitted, an operator must also include the refined screening analyses defined in the protocol for comparison.

The draft protocol for *Screening Hazard and Risk Analysis* has been distributed to stakeholders for review. The next step is to address the issues raised, which will be accomplished through stakeholder workshops. In the meantime, work continues on the accompanying technical appendix, computer codes, and workbook/user guide. It is planned to finalize the protocol in October 2002.

The EUB believes the protocol will satisfy Recommendation 17 by providing a standardized method for hazard and risk analyses; the screening analyses will satisfy Recommendation 18 by defining the inputs and modelling assumptions; and the EUB's work in developing the protocol and plans to maintain it will satisfy Recommendation 19. The EUB is encouraged by the positive feedback already received from stakeholders.

The table below shows all the action items for Recommendations 17, 18, and 19.

| Completed | Current | Future |
|---|---|---|
| Publish draft protocol | Address stakeholder feedback | Publish workbook/user guide |
| | Technical appendix | Finalize and publish protocol |
| | Computer codes and spreadsheets | |

### Deliverables

The key project deliverables based on the revised scope of work include

- technical appendix and spreadsheet,
- workbook/user guide,
- computer program to calculate the temperature, density, fraction of vapour and liquids, and other fluid properties for input into the dispersion model,
- modified SLAB[4] dispersion model, and
- frequency analysis of well blowouts and pipeline ruptures involving sour gas.

### Dependencies

Although the protocol can be completed based on existing health effects end points, full implementation cannot be achieved until the new health effects criteria (Recommendation 9) are available. A decision has yet to be made on how to implement the protocol in the interim. Recommendations 17, 18, and 19 provide the basis for Recommendations 52 and 58.

[4] U.S Environmental Protection Agency approved, the SLAB model treats denser-than-air releases by solving the one-dimensional equations of momentum, conservation of mass, species, and energy, and the equation of state. SLAB handles release scenarios including ground-level and elevated jets, liquid pool evaporation, and instantaneous volume sources.

## Recommendations 32 and 33: Require Applicants to Submit Multiple Well/Facility Applications and Area Plan for Future Development

*The EUB support area planning among operators and require well applications to include at least general information regarding existing and possible future area plans where sour gas in involved near people.*

*For sour gas near people, the EUB require project plans as part of well applications where a well is part of a larger project of the applicant and encourage applications for more than one well and facility at one time where feasible.*

### Intent

The EUB needs to support area planning among operators and requires well applications to include at least general information regarding existing and possible future area plans where sour gas is involved near people. The EUB requires project plans as part of well applications where a well is part of a larger project and encourages applicants to submit more than one well or facility application at a time where feasible.

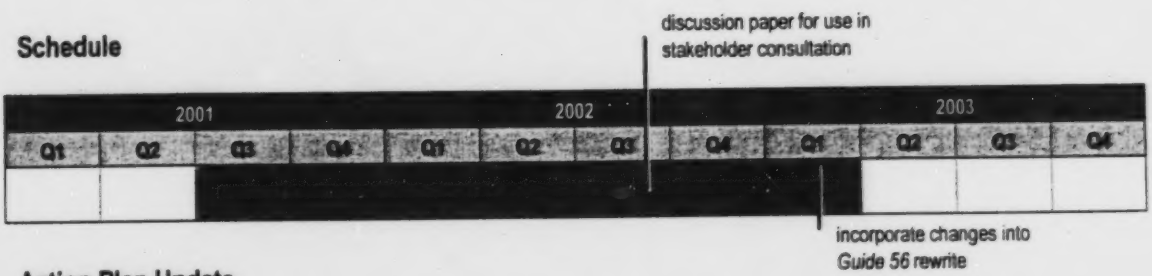
### Lead Agency/Branch

EUB Applications

### Stakeholders

CAPP, SEPAC, public

### Schedule




### Action Plan Update

This project has much in common with both Recommendations 6 and 7, which relate respectively to sour gas plant and other facilities proliferation. As well, there are ties to Recommendation 34 in terms of coordination with local government agencies during the application process. On the whole, requiring more detail about facility/area planning enhances the public's opportunity to learn about existing and proposed sour gas development in their area. Further, it may assist local synergy groups, community groups, and local governments to understand the activity proposed.

The EUB team has been with stakeholders and experts to gain an understanding of the types of information available on how to provide project or area planning information in forms that aid public understanding and to investigate the feasibility of related technology (e.g., databases and geographical information systems. EUB staff has met with other government agencies that use and approve area development plans to understand the type and form of information submitted, and how the area/project plans are used. Existing EUB requirements, such as *IL 93-9: Oil and Gas Developments, Eastern Slopes* and project plans submitted about hearings, have also been reviewed. The results of this work have been summarized in a draft discussion paper. This document will be further developed as a basis for wider stakeholder consultation later in 2002.

Before documenting or implementing any changes to the current application process, the project team will engage stakeholders to review a discussion paper on the recommended enhancements.

The table below shows all action items for Recommendations 32 and 33.

| Completed | Current | Future |
|---|---|---|
| Evaluation of GIS mapping tools for presenting planning information | Discussion paper | Consultation on discussion paper |
| Exploratory stakeholder consultation | | Propose specific changes to *Guide 56* and/or a new policy (IL/ID) |
| | | Complete EUB consultation with industry, public |

## Deliverables

There are two key deliverables for this project: a discussion paper by the end of the third quarter of 2002 to stakeholders for review, and recommended changes to application requirements incorporated into the *Guide 56* rewrite in the first quarter of 2003 and/or issued through a new IL/ID.

## Recommendation 34: EUB/Government Agency Coordinated Policy and Application Review

*The EUB increase and improve coordination between itself and AENV, other involved government departments, and municipality and regional health offices.*

### Intent

Ensure that EUB processes, for development of sour gas related policy and review and approval of sour gas applications, provide appropriately for disclosure and consultation with relevant Provincial and Municipal agencies, as well as RHAs early in the process.

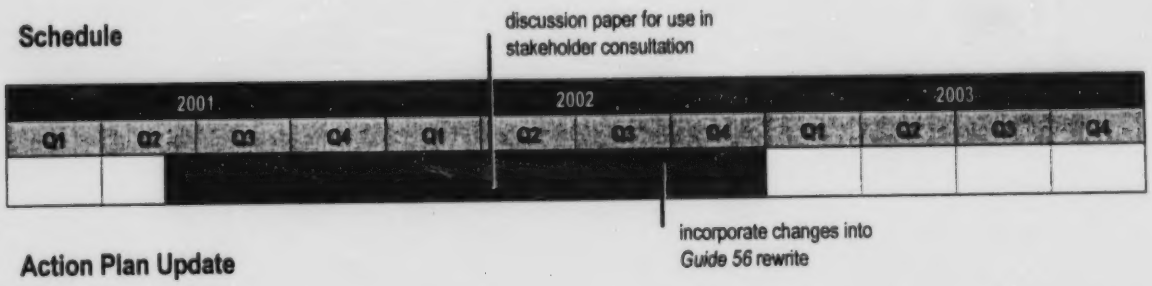
### Lead Agency/Branch

EUB Applications

### Stakeholders

AENV, AHW, RHAs, municipalities (through related associations or Municipal Affairs), CAPP, SEPAC

### Schedule




### Action Plan Update

In order to build a framework for cooperative liaison and support, the project team organized a series of meetings with AHW and RHAs from around the province. Discussions focus on defining the problems with sour gas applications, identifying government requirements, and developing solutions accordingly.

Subsequently, meetings will take place with local municipal governments, AENV, the DOE, and others to decide how the existing application process can be streamlined to involve all interested parties at an earlier stage. The solution will likely involve an agreement on policy development protocol and a more complete application disclosure by the operator.

Stakeholder discussions to date have identified that most provincial and municipal government offices cannot efficiently handle large numbers of individual applications. As well, stakeholder discussions revealed that in order to produce an emergency response plan (ERP) for sour gas development applications, operators must consult with the same local RHAs, other government agencies, and community, First Nations, and environmental groups interested in a specific sour gas development. Therefore, a process involving "area" or "annual" submissions would be one option to increase the effectiveness of these groups.

Any proposed changes to current application requirements will be incorporated into the revised *Guide 56* and/or be published as a new policy (IL/ID). Policy inclusion and protocols will also be documented. If the project team, through stakeholder engagement, determines that detailed area or annual plans are required, implementation of this process will likely be handled through Recommendations 32 and 33.

The table below shows all completed, current, and future action items for Recommendation 34.

| Completed | Current | Future |
|---|---|---|
| Initial meetings with key contacts at RHAs and AHW | With RHAs and AHW, identify current problems, needs, and develop solutions | Make changes to *Guide 56* and/or new policy (IL/ID) |
| | | Update and publish contact list and protocols |
| | | With AENV and DOE, revise current process for efficiency |
| | | Identify and address information needs |
| | | Intra-government management review process |

## Deliverables

The key deliverables for Recommendation 34 are the requirements for operators to develop and disclose project or area plans to provincial and local agencies, including RHAs.

## Recommendations 39 and 40: Rewrite *Guide 29: Hearing Process*, Make Hearings User Friendly

*The EUB increase efforts to make hearings less formal and more user-friendly.*

*The EUB rewrite its brochure,* Guide 29, *on the hearing process to make it more understandable and then make it more widely available to the public.*

### Intent

Improve public understanding of the hearing process so that hearings are less intimidating to the public and more efficient when they are held, while continuing to provide a process that safeguards the rights of all parties.

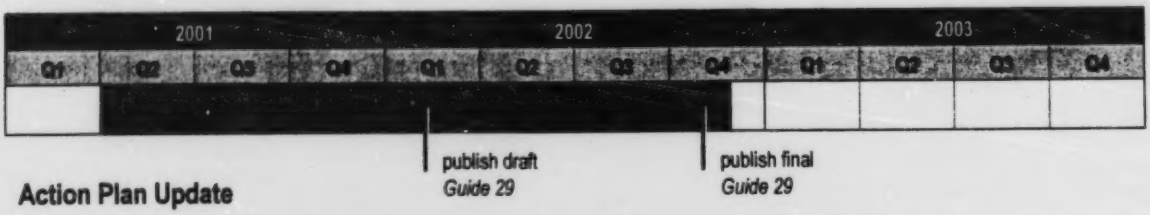
### Lead Agency/Branch

EUB Law

### Stakeholders

CAPP, SEPAC, First Nations representatives, public

### Schedule




### Action Plan Update

As part of addressing Recommendations 39 and 40, the EUB Law Branch has redrafted *Guide 29* into a more comprehensive document entitled *Guide 29: Energy and Utility Development Applications and the Hearing Process*. A companion document to this guide has also been created: *Guide 29A: EUB Hearing Process and Local Interveners' Costs for Energy and Utility Development Applications*.

While staff from the EUB field centres and the Applications Branch normally provide adhoc advice and assistance to parties during mediation efforts and the review of specific applications, the primary purpose of these guides is to further assist members of the public who wish to participate in the hearing process if they feel a decision of the EUB may directly and adversely affect them. However, the guides do not deal with the process used for utility rate applications.

In order to also make the hearing process less formal and more user friendly, staff from the Law and Applications Branches are available to meet with local interveners prior to a hearing in order to discuss the hearing process in greater detail. Staff from the Law Branch are also available to respond to any intervener's questions regarding the hearing process.

Copies of the guides have now been forwarded to all interveners who participated in hearings over the last two years, as well as to EUB field staff. In order to engage stakeholders during the six-month trial period of *Guide 29* implementation, the document will be provided to all interveners for upcoming hearings from March through August 2002. It is intended that the guides be finalized by the end of 2002.

The table below shows all completed, current, and future tasks for Recommendations 39 and 40.

| Completed | Current | Future |
|---|---|---|
| Redraft *Guide 29* | Request feedback on *Guide 29* and brochure from stakeholders | Finalize guide based on feedback |
| Create *Guide 29* companion brochure | | Implement prehearing workshops for interveners |
| Develop *Guide 29* feedback form | | |

## Deliverables

There are two key deliverables on this project: the revised *Guide 29*, and the new *Guide 29A*, each of which will make hearings more user friendly, while remaining effective and efficient.

# Sour Gas Operations

PS SG IMPLEMENTATION
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# Sour Gas Operations

## Overview

Under the Sour Gas Operations category, seven recommendations were started in the first year. These recommendations largely involved general improvements to existing processes under the EUB Field Surveillance and Compliance and Operations Branches. The project teams are pleased to report that six of the seven projects have been completed during the first 12 months of implementation.

The one project where work is ongoing is Recommendation 22, regarding the provision of adequate third-party damage prevention for sour gas pipelines. To meet the intent, the project team drafted amendments to the Pipeline Act and Regulation to require mandatory participation in Alberta One-Call for all sour pipeline operators. These amendments must pass through the regular government approval process before changes can be brought into force. In the meantime, work is continuing on the feasibility of implementing mandatory certification for personnel responsible for ground disturbance around sour pipelines.

The six other projects in the Sour Gas Operations category are considered complete. The EUB has implemented improvements that involve updating inspection protocols, response to complaints, and air-monitoring procedures in the field. To support these changes, additional field staff have been hired. All changes to procedures have been incorporated into the Field Surveillance 2002/2003 Operational Plan.

To fulfill the intent of Recommendation 25, Field Surveillance modified the inspection selection criteria for sour gas processing plants and sour oil production facilities, updated the existing EUB inventory of approved ERPs, and noted the current status of each facility. This information is used in scheduling inspections on a priority basis.

As part of Recommendation 27, a resident contact form and resident letter were developed to assist field staff in public notification. These tools are also being used in conjunction with Recommendation 25 to notify residents near sour facilities with ERPs of the EUB's inspection and audit results. To assist field staff in performing ERP audits, an audit check sheet detailing appropriate enforcement action was also developed.

To address Recommendation 26, Field Surveillance inspection priorities have been revisited and revised, and increased priority has been assigned to inspecting new and noncompliant operators. The effectiveness of changes made to the inspection policy for new and noncompliant operators will be tracked and reported as part of the operator history, site sensitivity, and inherent risk (OSI) inspection process.

To address Recommendation 27, Field Surveillance increased the inspection frequency on critical sour wells to 100% and now notifies nearby residents of inspection results. To assist Field Surveillance in communicating sour well inspection results to the public, a resident contact form and a resident letter, as previously mentioned, were developed and implemented.

The Field Surveillance complaint-handling process has also been revised, and 100% of sour gas complaints are now being immediately followed up by field staff. The updated process has been included in the Field Surveillance 2002/2003 Operational Plan. Field Surveillance will measure the effectiveness of the revised complaint-handling process by periodically surveying random groups of complainants.

To address Recommendation 68, the EUB's existing monitoring capability has been upgraded and an additional mobile air-monitoring unit has been put into service. To maximize the use of the available monitoring equipment, a schedule has been included in the 2002/2003 Operational Plan. The EUB has two fully equipped air-monitoring units and is capable of conducting tests of air quality at and around sour gas facilities, thereby encouraging the reduction of sour gas emissions and the level of operator noncompliance.

To address the intent of Recommendation 85, EUB staff confirmed that a sour gas complaint and incident response process exists for all communities in Alberta, including Aboriginal communities. Improvements have been made to address communications of the EUB's role in complaint and incident response to Aboriginal communities. Field Surveillance has been working with IOGC to develop workshops to be held with First Nations communities to improve understanding within the communities of sour gas operations. EUB staff have also begun cultural awareness training with the help of an Aboriginal consultant.

## COMPLETE

## Recommendation 25: Increase Frequency of Sour Gas Inspections

*The EUB increase the frequency of inspections and audits and continue to conduct both arranged and unannounced inspections of sour gas operations and develop simple, practical ways of informing nearly residents of inspection and audit results.*

### Intent

Pay closer attention to sour gas operations and inform the nearby public of the inspection results to ensure that they understand that the facility is operating safely and with minimal impact.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | CAPP, SEPAC, public |

### Completion Statement

The OSI inspection criteria for sour oil production facilities and sour gas processing plants has been modified as follows:

- Sour gas plants with sulphur recovery have inspection cycle increased from a 3-year cycle to a 2-year cycle.
- Sour gas plants with acid gas flares have inspection cycle increased from a 5-year cycle to a 3-year cycle.
- Sour oil batteries with ERPs have inspection cycle increased from a 5-year cycle to a 2-year cycle.

Field Surveillance created a current inventory of sour gas processing plants and oil batteries that have EUB-approved ERPs and identified the current status of each of those plans so that inspections for these facilities could be scheduled as part of the Field Surveillance 2002/2003 Operational Plan.

A resident contact form and letter were developed to assist field staff in public notification. These tools are being used in conjunction with Recommendation 25 to determine whether residents who reside within emergency response planning zones are aware of and understand the ERP requirements. Public contact data are logged in a computer tracking program so that Field Surveillance can gauge public understanding of ERP activities. All field staff have been trained on how to use the forms and the computer-tracking program.

To assist field staff in performing ERP audits, an audit check sheet complete with the appropriate enforcement action was developed. The ERP reviews will be included in the Field Surveillance 2002/2003 Operational Plan.

The long-term goal is to increase the overall inspection percentage and decrease the number of unsatisfactory ERPs and the number of major or serious regulation infractions at sour facilities.

### Deliverables

There are several deliverables associated with Recommendation 25: the modified OSI inspection cycle, an updated list of sour facilities that require ERPs, and the ERP check sheet listing corresponding enforcement action.

### Dependencies

Reviewing, approving, and maintaining updated ERPs is the responsibility of the EUB's Compliance and Operations Branch. Recommendations 55 and 56 will address the EUB's process for auditing ERPs.

### Performance Measures

Performance measures include

- the number of inspections completed versus objectives set in the Operational Plan,
- the number of inspections that were satisfactory, minor, major, and serious unsatisfactory,
- the number and results of public contacts completed, and
- the number of ERPs reviewed.

Specific performance measures are detailed and reported on in the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 26: Increase Inspections of New and Noncompliant Operators

*The EUB increase inspections and audits for operators without a proven track record in sour gas operations and for those with a history of noncompliance.*

### Intent

The EUB increase inspections and audits for operators without a proven track record in sour gas operations and for those with a history of noncompliance.

### Lead Agency/Branch

EUB Field Surveillance

### Stakeholders

CAPP, SEPAC, public

### Completion Statement

Field Surveillance inspection priorities have been revisited, and as a result, increased priority has been assigned to inspecting new and noncompliant operator facilities. This increases the overall frequency and number of inspections being carried out.

The increased inspection frequency schedule for sour facilities has now been incorporated into Field Surveillance 2002/2003 Operations Plan. To support this effort, two field inspectors have been hired and trained.

The EUB considers that the increased inspection frequency has satisfied the intent of Recommendation 26.

### Deliverable

The EUB has increased inspections on new and noncompliant operators to ensure compliance with EUB requirements and will continue to track and report inspection results.

### Performance Measures

Performance measures include

- the number of inspections on new and noncompliant operators, and
- the number of inspections that were satisfactory, minor, major, and serious unsatisfactory.

Results are tracked and reported as part of the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 27: Implement 100% Inspection Rate for Critical Wells Near People

*The EUB inspect critical sour wells located near people at least once during or immediately prior to drilling of the critical zone and inform nearby people of the inspection results.*

### Intent

The EUB inspect critical sour wells located near people at least once during or immediately prior to drilling of the critical zone and inform nearby people of the inspection results to ensure that critical sour well operations located near the public occur safely with minimal impact and that the public is aware of and understands the ERP.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | Public |

### Completion Statement

Effective September 1, 2001, EUB Field Surveillance increased the inspection frequency on critical sour wells to 100%.

To assist field staff in communicating sour well inspection results to the public, a resident contact form and letter were developed. All public contacts are logged into a computer tracking system to record and report on the number of residents contacted, along with any concerns they may have with the drilling operations. All public concerns are followed up by EUB Field Centres.

All of these changes have been incorporated into the Field Surveillance 2002/2003 Operational Plan. The EUB believes that the changes made will better inform the public, increase operator awareness and compliance, improve public safety, and satisfy Recommendation 27.

### Deliverable

Conduct inspections on 100% of critical sour well operations to ensure they are in compliance with EUB requirements.

### Dependencies

Field staff inspections include a review of training and experience requirements for supervisory staff, rig crews, service personnel, and safety specialists. This requirement fulfills part of Recommendation 36.

## Performance Measures

Performance measures include

- the number of inspections completed versus the number of critical sour wells drilled/serviced,
- the number of inspections that were satisfactory, minor, major, and serious unsatisfactory,
- the number of public contacts made, and
- the number of ERPs reviewed.

Results are tracked and reported as part of the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 28: Response to Sour Gas Complaints

*The EUB give highest priority to sour gas complaints, investigating them within one day whenever possible, and always following up with the complainant.*

### Intent

The EUB give highest priority to sour gas complaints, investigating them within one day, and following up with the complainant.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | CAPP, SEPAC, public |

### Completion Statement

Field Surveillance's complaint-handling process has been revised to conduct immediate investigation of all sour gas-related complaints, and 100% of these are followed up on by EUB staff to inform complainants of investigation results.

To gauge the effectiveness of complaint handling and resolution, complainants are contacted through a "complaint call-back" process. This is done to ensure that the operational concerns have been resolved to the complainant's satisfaction. The results of the complaint-handling process are detailed and reported on in the EUB's three-year business plan.

The updated complaint-handling process has been integrated into Field Surveillance's 2002/2003 Operational Plan, and the EUB believes the changes made satisfy the intent of Recommendation 28.

### Deliverable

Ensure Field Surveillance staff continue to immediately respond and follow up on all complaints received. Routinely report on and analyze the complaint-handling process.

### Performance Measures

Performance measures include

- the number of incidents resolved to the complainant's satisfaction,
- the percentage of complainants satisfied with the response from the operator,
- the percentage of complainants confident that industry will satisfy their concerns in the future, and
- the percentage of complainants satisfied that the EUB responded in a timely manner.

Results are tracked and reported as part of the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 68: Enhance EUB Monitoring of Complaint Response/Compliance

*The EUB enhance its capability to conduct monitoring as part of its complaint response and compliance programs.*

### Intent

The EUB improve its capability to conduct air monitoring as part of its complaint response and compliance programs.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | CAPP, SEPAC, public |

### Completion Statement

The EUB's existing monitoring equipment has been upgraded and an additional air-monitoring unit was purchased and put into service in the second quarter of 2002. A technician was also hired and trained to conduct monitoring activities.

To maximize the usage of the available equipment, a monitoring schedule of sour facilities was developed. This schedule has now been included in the 2002/2003 Operational Plan.

The project team believes the actions taken satisfy the intent of this recommendation.

### Deliverable

To conduct routine and specific monitoring due to odour complaints near sour gas facilities in the province using the two fully equipped air-monitoring units.

### Performance Measures

Performance measures include

- tracking and reporting on the number of facilities monitored,
- tracking and reporting on the number of facilities in compliance,
- tracking and reporting on the number of minor, major, and serious unsatisfactory facilities, and
- measuring the improvement in industry compliance through a reduction in sour gas emissions.

Results will be summarized and published in the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 85: Complaint/Incident Response Programs for Aboriginal Communities

*The EUB ensure the existence in First Nations and Metis communities near sour gas developments, of a good complaint and incident response program that would have monitoring capabilities and surveillance and monitoring programs that provide good information on general air quality.*

### Intent

To confirm a complaint and incident response program exists that includes the capability to inspect, monitor air quality, and improve the First Nations and Metis communities' awareness and understanding of EUB operations.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | First Nations and Metis community representatives, Indian Resource Council (IRC), Alberta Aboriginal Affairs and Northern Development (AAAND) |

### Completion Statement

The EUB has a comprehensive incident response and complaint handling process in place that applies to all communities in Alberta. This process has recently been improved by addressing Recommendations 28 and 68.

Much of the work to address Recommendation 85 has involved increaing the awareness of Aboriginal communities of the role of the EUB and its operations. The first step was to develop an appropriate communications protocol, which was completed with the aid of an Aboriginal consultant prior to discussions with First Nations and Metis communities.

The EUB has met with Indian Oil and Gas Canada (IOGC) to develop and hold joint workshops for Aboriginal and Metis communities. The objective is to improve the understanding within those communities of sour gas operations and the role of the EUB and IOGC. Initial meetings have also been held with representatives from selected Aboriginal and Metis communities to identify issues and develop resolution strategies. All parties were made aware of the process to follow when issues arise. In addition, the EUB hired two Aboriginal staff to assist with the development of workshops and other response programs for First Nations and Metis communities.

A training program for EUB field staff has been started to enhance awareness and understanding of First Nations cultures. So far about 200 EUB staff have participated in this training.

The EUB considers that the current comprehensive incident response and complaint-handling process for all communities in Alberta, and the actions taken to build better relationships with aboriginal communities, has satisfied the intent of Recommendation 85.

### Supplemental Work

The EUB believes that firm foundations have been set that must now be built on. To do this, the EUB and IOGC joint workshops will continue, and an Aboriginal and Metis information sessions will continue.

### Deliverables

There are a number of deliverables already in place for Recommendations 28 and 68 that are applicable to Recommendation 85. These are to continue to include

- immediately respond and follow up on all complaints received,
- conduct routine monitoring of sour facilities in the province using the fully equipped air-monitoring units, and
- routinely report on inspections and complaints.

In addition, the actions being taken to work with First Nations and Metis communities will lead to a better understanding of oil and gas operations, the roles and responsibilities of the EUB and IOGC, and whom to contact for help on sour gas concerns.

The EUB will continue to develop an understanding of First Nations communities through the cultural awareness training program.

### Performance Measures

Performance measures include reporting on

- the number of First Nations and Metis communities visited, and
- the issues identified and the progress toward resolution of those issues.

The specific performance measures are detailed in the annual *Field Surveillance Provincial Summary*.

## Recommendation 22: Review Adequacy of Third-Party Damage Prevention for Sour Pipelines

*The EUB implement stronger measures to safeguard against third-party damage to sour gas pipelines.*

### Intent

Provide options that may reduce the possibility of sour gas pipelines incurring third-party damage.

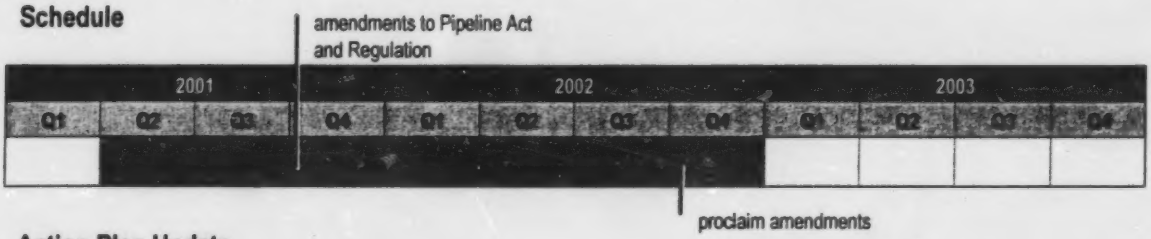
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

CAPP, SEPAC, CSA, CEPA, Alberta One-Call

### Schedule




### Action Plan Update

Amendments have been drafted for the Pipeline Act and Regulation to require mandatory participation in Alberta One-Call for all sour pipeline operators, and work is continuing on the feasibility of implementing mandatory certification for personnel responsible for ground disturbance around sour pipelines.

The table below summarizes all completed and current action items associated with Recommendation 22.

| Completed | Current | Future |
|---|---|---|
| Draft amendments to Pipeline Act and Regulation | Internal stakeholders review amendment | External stakeholders review amendment |
| | | EUB Law Branch review amendments |
| | | Amendments forwarded to Legislative Council for processing |
| | | Proclaim amendment |

### Deliverable

Improved regulations to help reduce third-party damage to pipelines.

# Emergency Preparedness

# Emergency Preparedness

## Overview

The Emergency Preparedness category of PS&SG involves 11 recommendations, resulting in six projects.

To date, work has been completed on Recommendations 54, 60, and 61. The project team evaluated the existing process for review and approval of reduced EPZs, the review of ERPs, and the determination of calculated EPZs. In the fall of 2001 the EUB clarified its requirements in *ID 2001-05: Site-Specific Emergency Response Plans for Sour Operations, Emergency Planning Zones, and Reduced Planning Zones*.

Recommendation 15 involves ensuring that all major sour gas release events are followed up. The project team completed a full review of existing procedures for handling such incidents and clearly defined the procedures to be followed. The team drafted an incident response and reporting protocol, which was approved by the Board in January 2002 and has been implemented as a six-month pilot project. The team will report back to the Board with results for review and final approval in the fall of 2002. EUB staff has also worked with Alberta Municipal Affairs, Disaster Services Branch, to revise the *Alberta Emergency Support Plan: Upstream Petroleum Incidents*, which also includes a protocol for follow-up to major releases by government departments and agencies.

Recommendations 55 and 56 were combined into one project to provide for an auditing procedure that will assess the operator's capability to implement its ERP. The draft emergency management audit procedure will be reviewed with stakeholders, and the final procedure will be incorporated into the EUB's *Emergency Management Guide*.

With regard to Recommendations 57, 63, and 64, that deal with the publication of the *Emergency Management Guide*, the EUB has developed a comprehensive draft guide that is currently being reviewed by stakeholders. The original end date for this project was extended to allow work required for all other recommendations under Emergency Preparedness to be completed and incorporated prior to finalizing the guide.

Recommendation 87 required the project team to create a summary report on the current infrastructure and resources available in or to First Nations and Metis communities for sour gas ERP planning and execution. Alberta Municipal Affairs, Disaster Services Branch completed a report and provided it to the EUB in March 2002. A preliminary review suggests that existing programs do address Aboriginal communities in terms of sour gas ERP planning and execution. A more detailed review will be conducted and stakeholders will be asked for their feedback.

## COMPLETE

## Recommendations 54, 60, and 61: Interim Policy on ERP Review and Reduced EPZs

*The EUB continue its current approach of reviewing all site-specific ERPs in detail, including the criteria used to determine the size of the EPZ and all site-specific information included in an ERP.*

*The EUB require industry to use the EUB's current standard approach (EPZ curves) to determine EPZs until the review of EPZs proposed in recommendation 58 is completed.*

*In the interim, until the review of the approach to EPZs is completed [recommendation 58], the EUB not approve a reduced EPZ unless it is conditional on the immediate ignition of the well, and the EUB is satisfied that the well can be immediately ignited and kept continuously burning. The EUB must also be satisfied that the ERP adequately addresses the potential hazards to the public within the reduced zone and also within an awareness zone out to the distance of the calculated EPZ based on the current EUB approach (EPZ curves), and that a specific assessment demonstrates protection of human health.*

### Intent

Ensure that all ERPs meet EUB requirements and adequately address site-specific matters prior to approval. Ensure that every EPZ is defined based on appropriate criteria, using the EUB standard approach. Ensure that approval of a reduced EPZ does not impact human health by also reducing ERP resources or response time to the area.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Compliance and Operations | CAPP, SEPAC, RHAs |

### Completion Statement

To address Recommendations 54, 60, and 61, the EUB drafted an ID and asked stakeholders to comment. Following stakeholder review, an interim policy on ERPs and reduced EPZs was published in *ID 2001-05*. The ID confirms that the EUB will continue to review all site-specific ERPs to ensure compliance before approval is given, and that determination of calculated EPZs must be based on existing EUB standards. The ID also clarifies the conditions under which the EUB will consider a reduced EPZ and sets out the mandatory emergency response measures that must be in place if a reduced zone is approved.

With the issue of *ID 2001-05*, the EUB considers that the intent of Recommendations 54, 60, and 61 has been satisfied.

## Supplemental Work

These interim requirements will remain in effect until the EUB completes a comprehensive review of emergency preparedness requirements, including the methodology for determining EPZs (Recommendation 58). The comprehensive review is dependent on the outcomes of work under way on a number of other recommendations, including updating health effects information (Recommendation 9) and the review of dispersion and risk assessment models (Recommendations 17, 18, and 19).

## Deliverable

The deliverable for Recommendations 54, 60, and 61 is the interim policy in *ID 2001-0*.

## Recommendation 15: Follow-Up on Major Releases of Sour Gas

*The EUB, industry, Alberta Environment, Alberta Health and Wellness, regional health authorities, and federal regulators, as required, ensure that there is a thorough follow-up process after major sour gas releases (such as well blowouts or pipeline failures) to determine impacts and identify opportunities for response improvement.*

### Intent

To ensure a thorough assessment of the impacts of a major sour gas release, and have the parties involved ensure continuous improvement in prevention and response process.

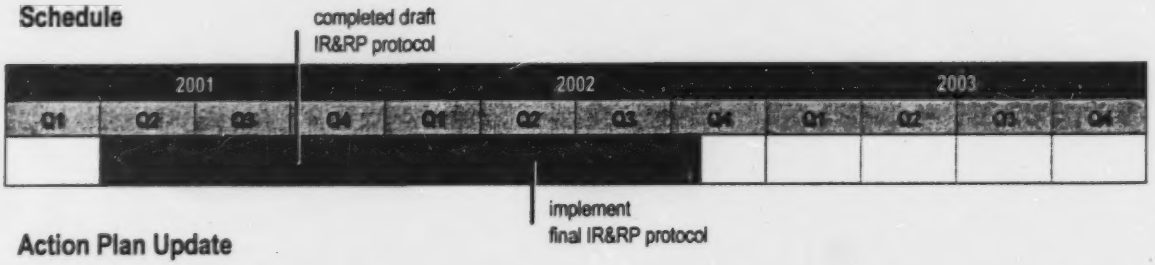
### Lead Agency/Branch

EUB Field Surveillance

### Stakeholders

CAPP, SEPAC, AENV, AHW, Alberta Municipal Affairs, RHAs

### Schedule




### Action Plan Update

In March 2000, the EUB Board directed staff to develop a documented follow-up process to ensure timely EUB response, investigation, enforcement reporting, and follow-up of upstream petroleum incidents, such as well blowouts, pipeline failures, and flaring events. Although PS&SG Recommendation 15 was not the trigger to begin development of a new protocol, the EUB project team confirmed that it would address the EUB's internal follow-up process which partially meets the intent of this recommendation.

The project team completed a full review of existing procedures for handling such incidents and clearly defined the various roles in the process. Once this analysis was completed, the team drafted the *Incident Response and Reporting Protocol* for upstream petroleum incidents.

The draft protocol was approved by the Board in January 2002 and was implemented in February as a pilot project for six months. The process will be returned to the Board for review and final approval in October 2002.

The draft protocol was sent to Alberta Municipal Affairs to be included in *Alberta Emergency Support Plan: Upstream Petroleum Incidents* and to the other government agencies that have responsibilities to respond to similar incidents.

EUB staff have also worked with Alberta Municipal Affairs to revise the *Alberta Emergency Support Plan: Upstream Petroleum Incidents*, which also includes a protocol for follow-up to major releases by government departments and agencies. The EUB draft protocol was provided to those other government agencies who have responsibilities to respond to upstream petroleum incidents as a model to consider when developing similar response and reporting processes. They have been asked to advise the EUB of follow-up processes in place.

The table below summarizes completed, current, and future actions identified for Recommendation 15.

| Completed | Current | Future |
|---|---|---|
| Develop incident response, investigation, and reporting protocol | Implement as a pilot process for 6 months | Review process and revise as necessary |
| Implement protocol | | Implement revised process |

### Deliverable

The final deliverable of Recommendation 15 will be that all government departments and agencies responsible for responding to upstream petroleum incidents have processes in place for responding, investigating, reporting, and following up on incidents.

### Performance Measures

As part of the EUB's commitment to ensuring that each PS&SG initiative includes performance measures, Recommendation 15 ensures that all incidents are investigated and reported on by field staff.

## Recommendations 55 and 56: Audit Process for Operator ERPs

*The EUB assess the capability of an operator to effectively implement an ERP at the time of application, and develop specific requirements to cover ERP validation through mandatory testing and exercises.*

*The EUB audit existing ERPs on a more frequent basis to ensure that*

- *the operator has the capability to implement its ERP,*
- *plans are updated according to requirements regarding frequency of updates,*
- *updating takes place immediately upon change of operatorship and prior to a new operator physically operating the facility, and*
- *adequate communication of updates with EPZ residents and emergency responders takes place.*

### Intent

To ensure that a process exists to assess the operator's capability to implement ERPs and maintain an appropriate level of emergency preparedness.

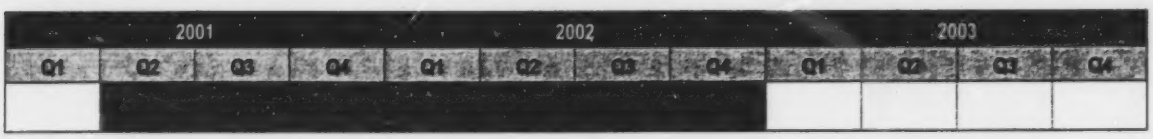
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

CAPP, SEPAC, Alberta Municipal Affairs (Disaster Services Branch), RHAs, local government authorities, public

### Schedule




### Action Plan Update

The project team evaluated the current audit process for operator ERPs. This process is necessary to ensure that an appropriate level of emergency preparedness is maintained by industry and other responders. Once the information of current procedures was gathered, the team called on internal EUB stakeholders to provide additional input and help define an audit process, specifically focusing on

- operator ability to effectively implement an ERP, utilizing paper scenarios, mock exercises, and additional testing of implementation capabilities, and
- operator capability to maintain an appropriate level of emergency preparedness,

A draft ERP audit procedure is currently being developed. This will be implemented in test form in late summer 2002, while a second stakeholder workshop takes place. The finalized operator ERP audit procedure will be incorporated into the EUB's *Emergency Management Guide* currently being developed and scheduled for publication in late 2002.

The table below summarizes the completed action items associated with Recommendations 55 and 56.

| Completed | Current | Future |
|---|---|---|
| Review current audit process for ERPs | Revise operator ERP audit process | Trial implementation of ERP audit process |
| Request input of internal EUB stakeholders | | Incorporate audit process into *Emergency Management Guide* |

## Deliverable

The key deliverable for Recommendations 55 and 56 is an ERP audit process that ensures operators and other responders maintain a sufficient level of emergency preparedness. This process is to be incorporated into the new *Emergency Management Guide*.

## Recommendations 57, 63, and 64: *Emergency Management Guide* and Requirements to Coordinate Responder Roles

*The EUB require the operator to coordinate roles and responsibilities to be followed in the event of an emergency with other emergency responders through early and effective discussions with the municipal Director of Disaster Services, and the regional health authority's Medical Officer of Health, during plan development.*

*The EUB encourage operators to establish mutual aid agreements in the areas with intensive industry development and multiple operators.*

*The EUB continue its initiative to work with stakeholders to develop clear, complete, and concise guidelines and requirements for ERP development and implementation.*

### Intent

Ensure that operators have clear, complete, and concise guidelines and requirements for ERP development and implementation that ensure an appropriate level of emergency preparedness. The requirements should reflect an approach based on the current state of scientific understanding and technology. Requirements must address the involvement of all responders.

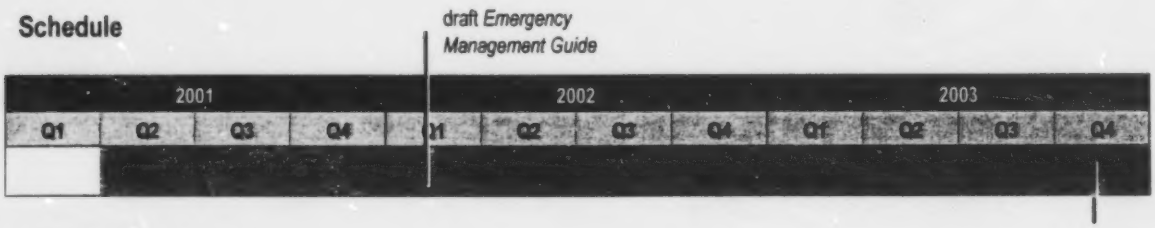
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

CAPP, SEPAC, Alberta Municipal Affairs (Disaster Services Branch), RHAs, public

### Schedule




### Action Plan Update

The original end date for this project was extended from the fall of 2001 to the fall of 2003. This extension was required so that the end dates for all other recommendations feeding data into the final *Emergency Management Guide* could be accommodated.

In order to meet the original intent, this project was divided into two phases. Phase 1 consisted of drafting a preliminary emergency management guide that consolidated existing IDs, ILs, and guides, along with other emergency management requirements, into a single document. This preliminary draft includes some new requirements.

This consolidated document was rolled out to stakeholders in February 2002 for review and feedback by April 2002. In order to provide a useful forum for stakeholder engagement, the project team will hold a workshop on the draft *Emergency Management Guide* in May 2002. An interim guide will be published in late summer 2002.

Phase 2 depends on the deliverables from other PS&SG recommendations for content to the *Emergency Management Guide* (see Dependencies, below), such as the draft protocol for Hazard and Risk Analysis to address Recommendations 17, 18, and 19 that establishes criteria for determining EPZs. Similarly, the results of other recommendations will establish specific evacuation, ignition, and sheltering criteria.

In Phase 2, the project team will also undertake a review of all aspects of the public protection measures, including increased coordination of plans and enhanced mutual and concepts currently utilized in the emergency preparedness requirements, and to improve or supplement these measures where necessary, to best ensure public safety.

Phase 2 will be completed when the comprehensive *Emergency Management Guide* is published, currently scheduled for the end of 2003.

The table below summarizes the completed, current, and future action items associated with Recommendations 57, 63, and 64.

| Completed | Current | Future |
|---|---|---|
| Prepare draft *Emergency Management Guide* | Hold workshop with stakeholders to review consolidated guide | Issue draft 2 of *Emergency Management Guide*, while a review of requirements continues |
| Stakeholders review and input for guide | Gather content from other PS&SG projects | Incorporate results from Recommendations 9, 17, 54, 55, 56, 59, 60, and 61 |
| | | Assess current public protection measures |
| | | Publish comprehensive *Emergency Management Guide* |

## Deliverable

The key deliverable of Recommendations 57, 63, and 64 is the comprehensive *Emergency Management Guide*, which will provide the requirements for defining an ERP.

## Dependencies

The results from Recommendations 9 and 59 will provide new health effects information for emergency management.

Addressing Recommendations 17, 18, and 19 will provide a draft protocol for the *Screening Hazard and Risk Analysis* used to define the size of an EPZ, which is a key factor in emergency planning.

Recommendations 55 and 56 will provide an operator emergency management evaluation process that describes how operators are evaluated for emergency preparedness.

## Recommendation 66: Clarify and Coordinate Monitoring Roles and Responsibilities

*The EUB, in cooperation with other emergency or episodic responders, ensure that the monitoring roles and responsibilities are clearly defined and that monitoring efforts and capabilities are coordinated.*

### Intent

To ensure that the air quality monitoring roles, responsibilities, and protocols of emergency and complaint responders are clearly defined, understood, accepted, and coordinated in order to respond quickly, determine if releases could have adverse impacts on public health and safety based on established standards, and if so, ensure that appropriate public protective measures are taken.

### Lead Agency/Branch

AENV

### Stakeholders

CAPP, SEPAC, Alberta Municipal Affairs (Disaster Services Branch), RHAs, Aboriginal communities

### Schedule

| 2001 | | | | 2002 | | | | 2003 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| | | | | | | | | | | | |

### Action Plan Update

This project began in January 2002 and is expected to continue until June 2002. AENV has taken the lead in ensuring air-monitoring needs and activities associated with public safety are adequately addressed and coordinated.

These responsibilities are already reflected in the draft update of the *Alberta Emergency Support Plan: Upstream Petroleum Incidents*, which details roles and responsibilities of all responders in the event of an upstream petroleum emergency. The plan, which is published by Alberta Municipal Affairs, Disaster Services Branch, in conjunction with other government departments and agencies, is scheduled to be tested through a mock exercise to be held in June 2002, prior to finalizing the document. The exercise will involve teams from EUB, Alberta Municipal Affairs, other local and provincial governments, and industry.

*IL 98-0: A Memorandum of Understanding between Alberta Environmental Protection and the Alberta Energy and Utilities Board Regarding Coordination of Release Notification Requirements and Subsequent Regulatory Response* is in place. This document sets out notification requirements for any release that may cause an adverse impact on the public, the environment, or property and also defines roles and responsibilities for responding to complaints or incidents.

The EUB's Field Surveillance Branch is developing a formalized process for tracking data from air-monitoring exercises conducted as part of the overall surveillance responsibilities. A more definitive enforcement process is also being developed for $H_2S$ emissions detected off lease. AENV has agreed to actively participate in the evaluation of monitoring data to determine which areas are at potential risk from product release.

### Deliverable

The key deliverable for Recommendation 66 is the finalized *Alberta Emergency Response Support Plan: Upstream Petroleum Incidents*, which will contain clear roles and responsibilities for air monitoring in the event of an emergency. Also, EUB Field Surveillance will revise procedures so that air-monitoring results will be tracked on an ongoing basis.

## Recommendation 87: Infrastructure and Resources for Aboriginal Community ERP

*The EUB work with Indian and Northern Affairs Canada (INAC), Health Canada (regarding First Nations), and Alberta Municipal Affairs (regarding Metis Settlements) to provide adequate infrastructure and resources to the First Nations and Metis for planning and development of disaster services capability.*

### Intent

Ensure that adequate infrastructure and resources are available for First Nations and Metis communities in sour gas areas to plan and implement a response to a sour gas emergency.

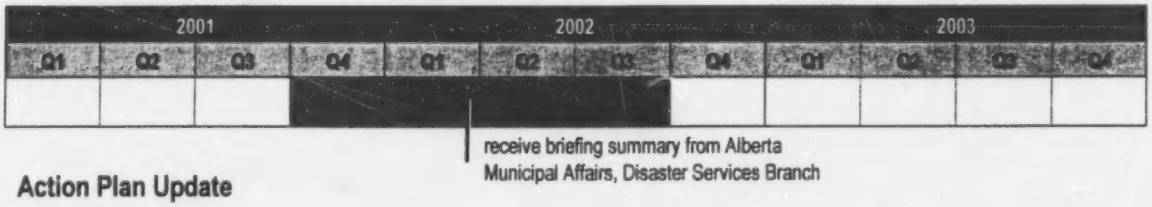
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

AAAND, INAC, IRC, Health Canada, Alberta Municipal Affairs (Disaster Services Branch), CAPP, SEPAC, RHAs

### Schedule




### Action Plan Update

In order to meet the intent of this recommendation, the project team engaged stakeholders and requested input for a summary report on current infrastructure and resources available for First Nations and Metis communities for sour gas ERP planning and execution.

Alberta Municipal Affairs, Disaster Services Branch completed this report in March 2002. Initial findings suggest that Recommendation 87 is being adequately addressed by existing programs through INAC, IOGC, and Alberta Municipal Affairs, Disaster Services Branch. A more detailed review will be conducted and additional infrastructure or resources are required, stakeholders again will be engaged so appropriate suggestions for meeting needs can be made.

The table below summarizes the action items associated with Recommendation 87.

| Completed | Current | Future |
|---|---|---|
| Engage stakeholders on current infrastructure/resource situation | Determine the need for additional infrastructure/resources | Define implementation process |
| Report on current infrastructure/resources | Engage stakeholders on community needs | |

### Deliverable

The key deliverable for this recommendation is a completed full assessment of the current infrastructure and resources available for First Nations and Metis communities for defining and maintaining an ERP for sour gas emergencies. If Recommendation 87 requires additional infrastructure or resources, the project team will identify these needs and propose an implementation plan.

# Information, Communication, and Consultation

# Information, Communication, and Consultation

## Overview

There are 15 recommendations that were started in the first year in the Information, Communication, and Consultation category. These comprise 10 projects overall, 2 of which have been completed.

Recommendations 29 and 37 were both completed during the first year of PS&SG implementation. They are aimed at involving EUB staff in landowner and industry discussions to help answer questions and resolve issues. The EUB takes an active role in synergy groups, open houses, and the facilitation of landowner and industry talks through the Appropriate Dispute Resolution (ADR) process. ADR has been a very successful in resolving many issues through more effective communications among parties involved in sour gas development. As part of its commitment to ADR, the EUB will incorporate ongoing process development and training for ADR into its business operations.

The project objectives of Recommendation 16 are to ensure collection, organization, and dissemination of sour gas data. The proposed method of information distribution is a sour gas Web site that could potentially be accessible by all stakeholders, including the public. Recent security concerns may restrict information that will be made publicly accessible. In the meantime, a pilot Web site has been developed which will be reviewed with stakeholders for feedback.

Recommendation 31 deals with increasing the availability of information on noncompliant operators. This project was not originally planned to start in 2001, but at the request of the EUB Board, a process for reporting enforcement actions on all level-3 and -4 noncompliance events was devised. The original thinking was that this information could be reported on a publicly accessible Internet site. However, the security implications of reporting company names and site locations for major and serious regulation infractions must be more fully addressed before any form of public reporting can proceed.

Recommendations 45 through 48 relate to the EUB's neutrality in carrying out its mandate, its role as the regulator, and industries funding contribution to the EUB. These four recommendations have been combined into a single project addressing improved communications between the EUB and its stakeholders. A strategic communications plan is currently being developed to address a number of the issues identified by the Advisory Committee.

For Recommendations 69, 70, and 74, the emphasis has shifted from establishing a public consultation team to clarifying the EUB's requirements for public consultation and establishing measures to monitor and enforce the requirements.

The project team intends to produce updated material for *Guide 56* and revise the existing EUB informational letter *IL 89-4: Public Involvement in the Development of Energy Resources*, in addition to an overall revision of the existing public consultation procedure. An assessment of training programs will also be conducted and development of new programs to be delivered by existing institutions will be considered.

The main focus of Recommendation 72 is to produce two user-friendly documents to assist the public in asking industry about proposed facility developments that may impact them. Currently, industry associations, landowners, and EUB staff are reviewing drafts of landowner questions and new development application questions. The final checklist will give insight into the most challenging issues

between landowners and industry and how those issues are being resolved with respect to public consultation and new development applications.

Recommendation 73 focuses on improving public and industry access to information. A meeting was held in early November 2001 with some members of the Advisory Committee and the EUB's First Nations consultant to fully discuss and understand the intent of the recommendation. It was clear from this discussion that any information provided to the public must be accurate, reliable, and up to date. As well, information must be easily accessible via a telephone call centre or on the Web site access. A consultant has been contracted to undertake research to identify the information needs and expectations of divergent public groups. Once the EUB has this information, it can proceed in developing communications tools that fit these needs, if they have not already been fulfilled by other recommendations.

In the mean time, the EUB will continue to respond promptly and efficiently to public information requests. The EUB Library, Information Services, and Communications and Applications Branches have always formed a "core" public response capability, and will continue to do so. While there is no single formalized "information office", it is very important to realize that questions and concerns from the public will be answered promptly. The EUB is committed to being open, transparent and approachable.

Recommendation 79 entails a study to determine the nature of local benefits from sour gas development. In order to meet the intent, a stakeholder steering committee involving industry, government, public, and municipal representatives was established to complete the study and prepare a report. An independent facilitator was used to facilitate interaction among committee members, chair meetings, deal with process matters, and assist the committee with writing the report.

The steering committee has defined the objectives, scope, expected results, methodology, and data requirements of the study. Committee members determined that the study should address the "net financial benefits" of sour gas development—that is, the amount of financial benefits relative to the amount of financial costs—to affected communities. The committee also agreed that it is important to acknowledge the human effects and the impact on quality of life of community residents as a result of sour gas development, even though this is beyond the original intent of Recommendation 79. Human health effects and quality of life impacts will be evaluated only in qualitative terms for the purposes of this study. The steering committee released a draft progress report on February 15, 2002, which is currently being finalized. At this time, work is moving forward on data collection, and a second progress report will be issued once the data have been collected and before the committee enters the data analysis phase.

The work to address Recommendation 81 will provide written and multimedia products to teach the public about the EUB. The project team concluded that a brochure on the EUB role would be of limited use and constantly out of date. Therefore, it was determined that a series of information components would better fulfill the intent of this recommendation. As a result, the scope of work was expanded to include a range of educational and informational materials, including brochures that are publicly available. Because of the expanded scope, the schedule for Recommendation 81 has been extended to include research time and stakeholder engagement. A set of information brochures called EUB *EnerFAQs* have been written and are available from the EUB Information Services and on the EUB Web site. Additionally, a videotape and CD-Rom were created, which complement new EUB written materials. This recommendation has also given the EUB an opportunity to provide energy development and science related information to school children across the province by designing a "science crate", a children's activity book, and a children's Web site.

## COMPLETE

## Recommendation 29: Field Staff in Industry-Landowner Discussions

*The EUB field staff become more involved in landowner-operator discussions of sour gas concerns and in multistakeholder groups and assist in answering questions and resolving issues, particularly as they relate to public health and safety.*

### Intent

The EUB field staff become more involved in landowner-operator discussions of sour gas concerns and in multistakeholder groups and assist in answering questions and resolving issues, particularly as they relate to public health and safety.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB Field Surveillance | CAPP, SEPAC, public |

### Completion Statement

Field staff are active in promoting resolution of issues by facilitating discussions between landowners and industry through the ADR program (see also Recommendation 37). Over the past 12 months, the EUB has become more active in promoting the development of synergy groups and open house activities. These forums provide the opportunity for the public and industry to discuss public safety and sour gas issues.

The purpose of EUB open houses is to

- communicate important EUB processes and policies,
- improve working relationships with stakeholders, and
- provide an opportunity for stakeholders to ask questions, express concerns, and solicit solutions to issues.

Open houses also offer attendees the opportunity to acquire information about the EUB and to discuss any issues they have with local field centre staff, EUB management, and Board Members. During 2001, open houses were held in High Level, Midnapore, Rocky Mountain House, and Pincher Creek.

In the first quarter of 2002 a conference made up of public, industry, and government representatives was held to promote synergy groups as an effective way of improving communication and resolving issues between the public and industry. There are 66 active synergy groups in Alberta, and the EUB continues to recommend, endorse, and participate in them where appropriate.

The EUB believes that the intent of Recommendation 29 has been satisfied by the involvement of field staff in open houses, synergy groups, and the ADR program.

### Deliverable

The key deliverable of Recommendation 29 is to assist in facilitating the resolution of issues between landowners and industry and increase public and industry understanding of all stakeholder roles and responsibilities related to public safety and sour gas.

### Dependencies

The actions taken to address Recommendation 29 will be included in the *Guide 56* rewrite.

### Performance Measures

Performance measures include

- the number of issues facilitated and resolved,
- the number of active and new synergy groups, and
- the number of public and industry open houses.

These measurements are reported as part of the annual *Field Surveillance Provincial Summary*.

## COMPLETE

## Recommendation 37: EUB Involvement in Mediation of Application Issues

*The EUB encourage mediation efforts and increase EUB staff involvement in an attempt to resolve concerns among stakeholders outside of the formal hearing process.*

### Intent

Proactive use of ADR tools, such as mediation and facilitation processes, to improve understanding among stakeholders and to facilitate resolution of issues outside more formal processes.

| Lead Agency/Branch | Stakeholders |
|---|---|
| EUB ADR Coordinator | CAPP, SEPAC, public |

### Completion Statement

ADR is a program that brings together all the parties involved to discuss concerns at the application stage. The objective is to resolve issues in a manner that recognizes the interests of all concerned, in other words a win-win situation. In this process, the EUB often acts as the facilitator among stakeholders. ADR implementation has involved the training of EUB staff throughout the province in effective facilitation.

Since the program was started, there has been considerable success, a conclusion supported by feedback from participants. In fact, 97% of those who provided feedback said they would participate in ADR again, and 94% indicated they would recommend that others try the program.

Participation of EUB staff is a key component in the success of the ADR program. In 2001, 161 field staff facilitations were initiated between landowners and companies, and 115 were completed, with 98 fully resolved (85%). All mediation participants indicated that the EUB staff involvement was highly satisfactory; it greatly assisted in the legitimacy of the process, enabled the development of reasonable options, and led to successful resolutions.

Third-party dispute resolution experts (service providers and mediators) dealt successfully with many of the more difficult conflicts. In 2001, 30 disputes were referred to dispute resolution experts, and 23 were completed, with 19 resolved (82%).

The EUB considers that the intent of Recommendation 37 has been addressed with the introduction of the ADR program. The development of the process was already under way at the start of PS&SG with the issue of *IL 2001-01: Appropriate Dispute Resolution (ADR) Program and Guidelines for Energy Industry Disputes* at the beginning of 2001.

### Supplemental Work

The EUB is committed to making the ADR program a continuing success. To achieve this there is an ongoing requirement to train EUB staff in effective facilitation and to maintain the roster of 3 service providers and 26 mediators.

### Deliverable

The key deliverable for this recommendation is ongoing process development and staff training for ADR.

### Performance Measures

The ADR program is reported on annually in a separate document. The report for 2001 is currently in draft. Examples of performance measures are

- number of EUB facilitations,
- number of facilitations completed,
- number of facilitations resulting in successful resolution of issues, and
- number of participants who would participate again and recommend ADR.

## Recommendation 16: Review, Organize, and Enhance Access to EUB Data

*The EUB review and organize its existing large quantity of sour gas data on well, pipeline, and facility leaks, ruptures, flares, and venting to provide a historical database that is accurate and complete and, in conjunction with other stakeholders, urgently develop and maintain new databases that deal specifically with sour gas and make such databases available to the industry and the public.*

### Intent

Ensure that the EUB has a comprehensive sour gas database that is accurate, complete, and available to the industry and general public.

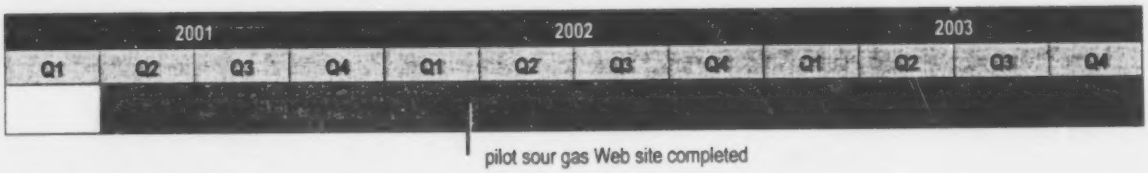
### Lead Agency/Branch

EUB Resources

### Stakeholders

Industry, government, public

### Schedule




### Action Plan Update

The project's objectives are to ensure collection, organization, and dissemination of sour gas data and information. Work is progressing with respect to appropriate collection and organization of data. A review of the existing databases revealed that some relevant gas analysis data had not been captured electronically. This has been rectified and now the information is resident within the database.

The project team agreed that data would be made available to all stakeholders via a dedicated a sour gas Web site. However, recent security concerns have made access to information a top discussion item for the project team. In the meantime, a service provider has been selected to develop and maintain a Web site. A pilot sour gas Web site was launched to internal stakeholders in March 2002, and feedback was requested by the project team. While the feedback process is under way, the project team will undertake an extensive review of the security requirements for the Web site. In addition, the team will analyze the requirements for data submission to ensure that they are complete and accurate, as well as commence work on the development of an internal GIS[5] system for sour gas information query and data manipulation.

A focus group session with stakeholders, including the public, will be scheduled in the second quarter of 2002 to solicit feedback on the proposed Web site, as well as to confirm data and information needs.

[5] The Geographic Information System (GIS) is a computer system capable of storing, manipulating, and displaying information over a map of Alberta. A user can select how much information to display on the map by adding or removing layers of data.

The table below summarizes the completed, current, and future action items associated with Recommendation 16.

| Completed | Current | Future |
|---|---|---|
| Missing gas analysis data captured | Determine security requirements | Consider surveillance and enforcement where required |
| Sour gas Web site provider selected | Review data requirements – submission, completeness, accuracy | Develop internal GIS system for sour gas information query and data manipulation |
| Pilot Web site developed | Pilot Web site presented to stakeholders | |

## Deliverables

The key deliverables for Recommendation 16 are a set of complete, accurate, and up to date databases of sour gas information that are accessible to internal EUB staff and external stakeholders. Access may be restricted externally where there are security implications.

## Recommendation 31: Increase Availability of Information on Enforcement Actions

*The EUB increase the extent to which it makes available the names of companies and the enforcement actions taken where there are major and serious infractions, as defined by the enforcement ladder, of sour gas regulations related to public health and safety.*

### Intent

The EUB increase the extent to which the names of companies and the enforcement actions taken are available where there are major and serious infractions, as defined by the enforcement ladder, of sour gas regulations related to public health and safety.

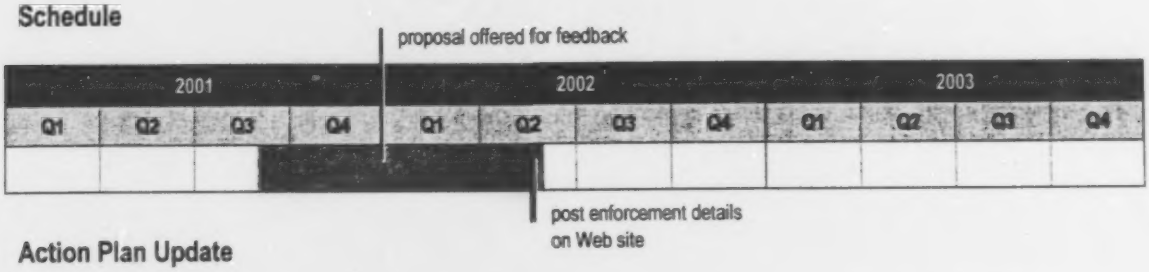
### Lead Agency/Branch

EUB Compliance and Operations

### Stakeholders

PS&SG Advisory Committee, CAPP, SEPAC, industry

### Schedule




### Action Plan Update

This project was not originally planned for year-one; however, at the request of the EUB Board, Corporate Compliance proposed a process for reporting enforcement actions on all level-3 and -4 noncompliance events. The draft process is currently out for review by CAPP/SEPAC representatives, as well as internal EUB stakeholders; feedback is expected within the next quarter. There are potential security implications with regard to reporting company names and site locations for major and serious regulation infractions.

The table below shows current, completed, and future action items for Recommendation 31.

| Completed | Current | Future |
|---|---|---|
| Prepare draft format for Board approval | Design process to gather/report information | Proceed with Board approval process |
| Discuss with industry representatives | Make changes suggested by Board | Issue GB, implement communication plan |
| Make changes as required | | Reporting level-3 and -4 enforcement information |
| Distribute draft to Board | | |

### Deliverable

The key deliverable for this recommendation is a monthly report updating level-3 and -4 infractions.

## Recommendations 45, 46, 47, and 48: Perception of EUB's Neutrality

*The EUB place greater emphasis on the need for its involved staff to be neutral when dealing with the public and industry respecting inspection results, complaints, and the resolution of concerns. This may require special training.*

*The EUB place greater emphasis on its role as a regulator to protect the public and provide a higher profile for its involvement in matters related to public health and safety.*

*The public be made aware of the clear distinction between Alberta Resource Development's role of promoting the development of Alberta's resources and the role of the EUB as a regulator that ensures that if developments are approved they take place in a manner that is in the public interest.*

*The manner of funding the EUB be reviewed, including a consideration of the possibility of returning the funding back to an equal sharing by the industry and government to reflect the dual role of regulating the industry and serving public interest.*

### Intent

The EUB must first understand stakeholder perception of the EUB's neutrality in carrying out its mandate. It then must take steps to make improvements where gaps exist in the public's understanding and perception of the EUB's neutrality.

### Lead Agency/Branch

EUB Communications

### Stakeholders

DOE, public

### Schedule

### Action Plan Update

The EUB has identified the need for improved communications with its stakeholders, especially the public, to better present what the EUB is and how it does its business. The EUB is developing a three-year strategic communication plan that addresses a number of the issues identified by the Advisory Committee. The first step in assessing stakeholder perception of the EUB is a gap analysis. This information will assist in determining actions needed to make improvements.

Actions such as staff training, improvements in communicating the EUB's role in regulating the energy industry, and communicating the EUB's commitment to ensure public safety are proposed. Implementation of the plan will begin this year and continue over the next two years.

Recommendation 48 suggests a review of the matter of funding of the EUB, with a possible objective of returning to a more equitable division of the EUB's total funding requirement between industry and government. The EUB is continuing to work with the Ministry of Energy to evaluate alternatives to the existing funding model. A review committee has been established to provide direction on this matter.

The table below summarizes the completed, current, and future action items associated with Recommendations 45, 46, 47, and 48.

| Completed | Current | Future |
|---|---|---|
| Information gathering for gap analysis | Gap analysis on stakeholder perception of EUB neutrality | Three-year strategic communications plan implementation |
| | Review of alternatives to existing funding model | |

## Recommendations 69, 70, and 74: Establish EUB Public Consultation Staff Resource Team

*The EUB establish a staff resource team that focuses on public consultation to assist industry in providing a more consistent approach to public consultation, including consultation with Aboriginal people.*

*The team referred to in recommendation 69 work with CAPP, training institutions and other industry associations to develop public consultation training programs that reflect EUB requirements and expectations for public consultation and that incorporate training in the practices set out in the CAPP Guide for Effective Public Involvement.*

*The EUB initiate, in conjunction with industry and training institutions, the development of effective communications training programs for those individuals responsible for communicating with the public respecting the technical aspects of sour gas.*

### Intent

Improve industry awareness of and compliance with EUB public consultation expectations. Ensure consistent public consultation practice through monitoring and training programs, thereby improving relationships among industry, the public, and the EUB. Work with stakeholders to set public consultation standards and develop training courses for public consultation and technical communication.

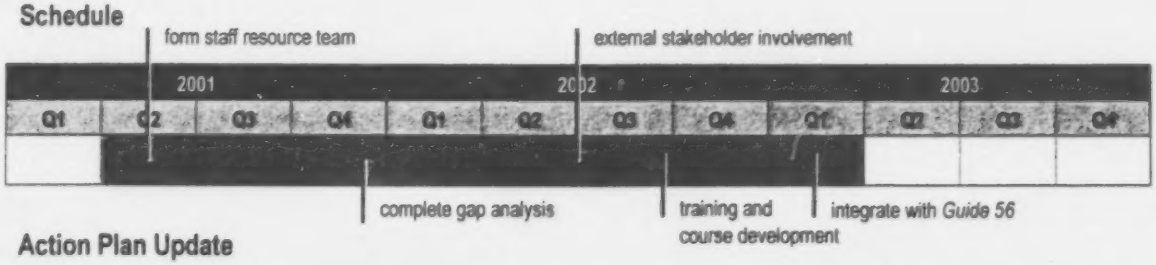
### Lead Agency/Branch

EUB Corporate Support

### Stakeholders

Training institutions, CAPP, SEPAC, First Nations and Metis community representatives, public

### Schedule




### Action Plan Update

The emphasis of this project has shifted from establishing a public consultation team to clarifying the EUB's requirements for public consultation, along with monitoring and enforcement measures, since active public consultation is ongoing in many branches of the organization.

In order to improve current procedures, staff training on public consultation will be addressed in the third quarter of 2002 in conjunction with stakeholders; this will likely be delivered by one or more existing training institutions (Olds College, Mount Royal College, University of Calgary Continuing Education).

In fulfilling the intent of this project, the project team will produce updated material for *Guide 56* and revise the existing *IL 89-4: Public Involvement in the Development of Energy Resources*, in addition to an overall revision of the existing public consultation procedure.

The table below shows current, completed, and future tasks for Recommendations 69, 70, and 74.

| Completed | Current | Future |
|---|---|---|
| Staff team formed | Rewrite *IL 89-4* | External stakeholder involvement |
| Gap analysis of EUB documentation completed | Create a glossary of public consultation terms | Integration of new requirements into *Guide 56* update |
| Strategy and timeline for development and implementation of new public consultation requirements completed | Develop new public consultation requirements, including processes for monitoring, evaluation, and enforcement | Assess current training programs for public consultation and possibly develop new programs to be delivered by existing training institutions |
| Cosponsored conference for synergy groups with CAPP and Alberta synergy groups | Address issues related to Aboriginal consultation | |

## Deliverables

There are four key deliverables for Recommendations 69, 70, and 74:

- creation of a staff resource team for public consultation,
- new public consultation requirements,
- rewrite *IL 89-4*, and
- possible development of new training programs for public consultation and/or technical communication.

## Recommendation 72: Landowner Questions and New Facility Application Checklist

*The EUB develop a list of suggested questions to assist the public during the public consultation process.*

### Intent

To provide the public with user-friendly tools for obtaining necessary and required information from industry personnel related to project plans, the public's rights and responsibilities related to sour gas development, and whom to contact for more information.

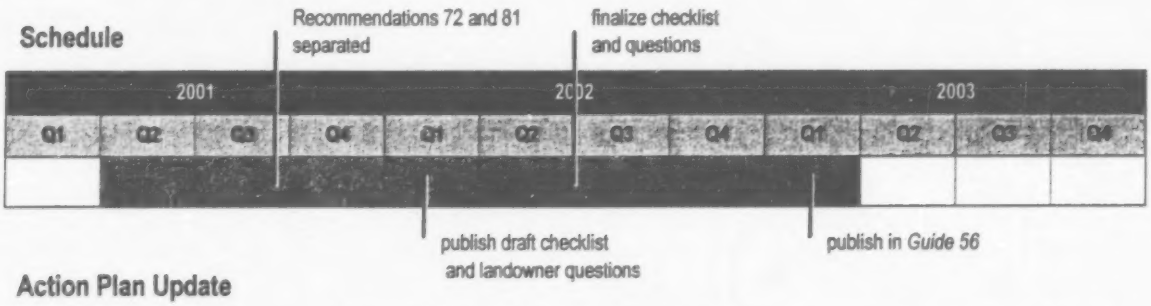
### Lead Agency/Branch

EUB Corporate Support

### Stakeholders

CAPP, SEPAC

### Schedule




### Action Plan Update

The main focus of Recommendation 72 is to produce two user-friendly documents to assist the public in asking the right questions about proposed facility development from industry.

Currently, industry associations, landowners, and EUB staff are reviewing drafts of landowner questions and new development application questions. To date, there has been a much stronger interest and involvement from industry in developing these tools than originally anticipated.

The final checklist will give insight into the most challenging issues between landowners and industry and how they are being resolved with respect to public consultation and new development applications.

Active work on Recommendation 72 will be completed by July 1, 2002, and the finalized landowner questions and applications checklist will be incorporated into the *Guide 56* update.

The EUB will also make the documents publicly available on its Web site and has included the questions and checklist as part of the EUB EnerFAQs series.

The table below shows current, completed, and future tasks for Recommendation 72.

| Completed | Current | Future |
|---|---|---|
| Draft landowner questions | Consultation with stakeholders | Publish in *Guide 56* |
| Draft checklist | Finalize questions and checklist | |

### Deliverable

The project deliverable is a set of questions to guide landowner/industry conversations about new developments and a checklist for industry to be included with all new development applications.

## Recommendation 73: Establish EUB Information Office

*Formation of an information office located within the EUB and supported by a stakeholder committee, to provide accurate, reputable, neutral information related to sour gas development and be a key contact for referring the public to sources of additional relevant, reputable information.*

### Intent

Improve public and energy industry access to unbiased information and key contacts. Disseminate information in a variety of formats, including liaising via stakeholder groups throughout the province.

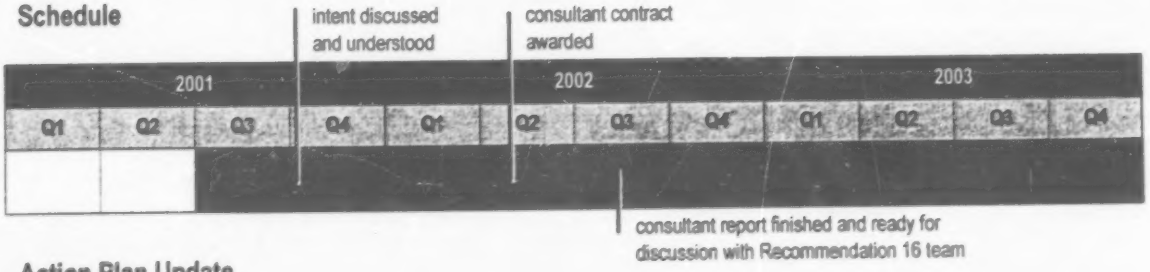
### Lead Agency/Branch

EUB Corporate Support

### Stakeholders

CAPP, SEPAC, public, AAFRD, Alberta Municipal Affairs, First Nations and Metis communities

### Schedule




### Action Plan Update

A meeting was held in early November 2001 with some members of the Advisory Committee and the EUB's First Nations consultant to fully discuss and understand the intent of the recommendation. It was clear from this discussion that any information to the public must be accurate, reliable, and up to date. As well, information must be easily accessible by callers via a telephone call centre or on the Web site. To ensure the information needs and expectations of divergent public groups are identified, a consultant has been appointed to undertake research on these matters. This process will include discussions with other government departments that currently have call centres, such as Alberta Agriculture. The costs of establishing and maintaining a call centre will be estimated and staff will make a recommendation to the Board once all of the information is gathered.

In the meantime, the EUB continues to respond promptly and efficiently to public information requests. The EUB Library, Information Services, Communications Group, and Applications Branches have always formed a "core" public response capability and will continue to do so. While there is currently no single formalized "information office," it is important to realize that questions and concerns from the public will be answered promptly. The EUB is committed to being open, transparent, and approachable.

Addressing the need for more and better information on the role and responsibilities of the EUB will require much more than printed materials. It is envisaged that the work to address Recommendation 81 will offer a suite of products that both educate and inform. These will be available according to current

information distribution procedures at the EUB and through an EUB information office, should this be formed at a later date.

The table below lists completed, current, and future action items associated with Recommendation 73.

| Completed | Current | Future |
|---|---|---|
| Project team formed | | |
| Project objectives outlined | | |
| Analyze and discuss dependency of Recommendation 73 on Recommendation 16 | | |
| Examine security implications | | |
| Recommendation 16 contract awarded. No further direction received on security issues | | |
| Research consultant contract awarded | Conduct research | Final consultant's report tabled |

## Deliverable

The key deliverable on Recommendation 73 is the consultant's report on the information needs and expectations of divergent public groups. Once the EUB has this information, it can proceed in developing communications tools that fit these needs, if they have not already been fulfilled by other recommendations.

The end date for this project is not yet known, as the project is dependent on the conclusions reached by the team responsible for addressing Recommendation 16 on access to EUB data. An EUB information office would rely on the immediate availability and the quality of information provided for under this recommendation. Security concerns still need to be resolved before certain types of data can be made publicly accessible.

## Recommendation 79: Determine Local Benefits from Sour Gas Development

*The EUB initiate a study involving industry, government, the public, and municipal representatives to determine the nature of local benefits, such as reduced property taxes and local business opportunities, to communities impacted by sour gas development.*

### Intent

Develop a better understanding of the economic effects of sour gas development at the community level, information essential for effective consultation and interaction between industry and the public.

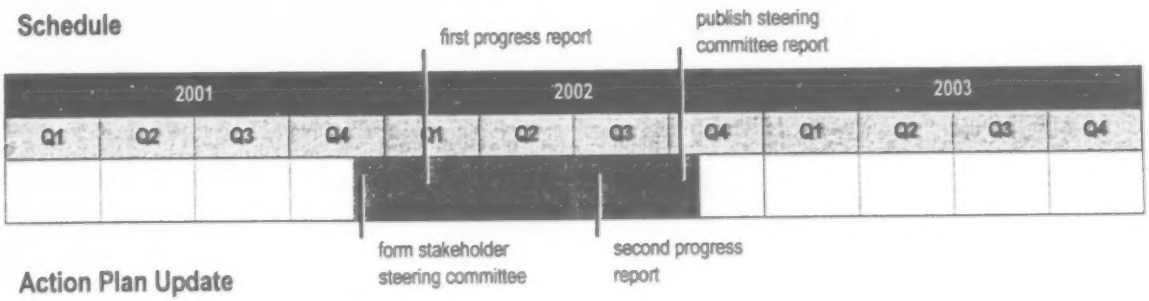
### Lead Agency/Branch

EUB Resources, Economics

### Stakeholders

CAPP, SEPAC, government, public

### Schedule




### Action Plan Update

Recommendation 79 entails a study to determine the nature of local benefits from sour gas development. In order to meet the intent, a stakeholder steering committee involving industry, government, public, and municipal representatives was established to complete the study and prepare a report. An independent facilitator was contracted by the EUB to facilitate interaction among committee members, chair meetings, deal with process matters, and assist the committee with writing the report.

To date, the steering committee has met four times. Much of its attention has been focused on defining the objectives, scope, expected results, methodology, and data requirements of the study. Committee members determined that the study should address the "net financial benefits" of sour gas development—that is, the amount of financial benefits relative to the amount of financial costs—to affected communities.

As well, the committee agrees that it is important to acknowledge the human effects and quality-of-life impacts on community residents as a result of sour gas development, even though this is beyond the original intent of Recommendation 79. Human health effects and quality-of-life impacts will be evaluated only in qualitative terms for the purposes of this study.

The steering committee released a draft progress report on February 15, 2002, which is currently being finalized. At this time, work is moving forward on data collection, and a second progress report will be issued once the majority of data has been collected and before the committee enters the data analysis phase.

The table below summarizes completed, current, and future action items for Recommendation 79.

| Completed | Current | Future |
|---|---|---|
| Form steering committee | Data collection | Second progress report |
| Agree on objective and scope | | Data analysis |
| First progress report | | Publish steering committee report |

## Deliverable

The key deliverable for Recommendation 79 is a report produced by the steering committee on the nature of net financial benefits to communities impacted by sour gas development.

## Recommendation 81: Public Consultation Materials—Role of EUB

*The EUB develop a brochure for the public that focuses on the role of the EUB and provides contact names and phone numbers to be given out when industry does public consultation.*

### Intent

Develop a brochure providing comprehensive information on the role of the EUB.

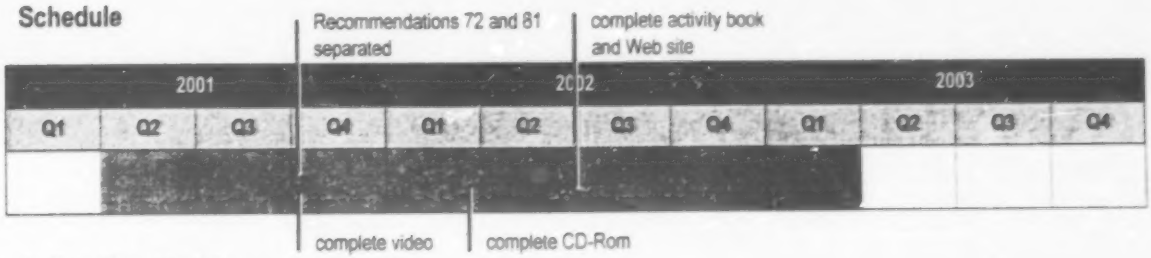
### Lead Agency/Branch

EUB Corporate Support

### Stakeholders

Alberta Science Foundation, educators

### Schedule




### Action Plan Update

Recommendation 81 was originally grouped with Recommendation 72. However, in September 2001, they were separated to form two projects. Addressing Recommendation 72 will provide public consultation materials, while the work to address Recommendation 81 will provide written and multimedia information to inform the public about the EUB.

The project team discussed at length the pros and cons of producing a brochure on the EUB role but determined that this would be of limited use and constantly out of date. It was determined that a series of information components would better fulfill the intent of this recommendation.

As a result, the scope of work was expanded to include a range of educational and informational materials, including brochures that are publicly available. Because of the expanded scope, the schedule for Recommendation 81 has been extended to include research time and stakeholder engagement.

A set of information brochures called "EnerFAQs" has been written and is available from EUB Information Services and on the Web site. Additionally, a videotape and CD-Rom were created, which complement new EUB written materials. This recommendation has also given the EUB an opportunity to provide energy development and science related information to school children across the province by designing a "science crate," a children's activity book, and a children's Web site.

The table below details action items associated with Recommendation 81.

| Completed | Current | Future |
|---|---|---|
| *EnerFAQs* brochures, EUB video | Science crate, CD-Rom, children's activity book, children's Web site, EnerFAQs | EnerFAQs written and released |
| | | Ongoing review of needs through stakeholder involvement in conjunction with Recommendation 73 |

## Deliverables

The key deliverables for this recommendation are the EnerFAQs brochures, which fulfill the original intent of the project. The expanded-scope deliverables include multimedia educational and information materials, such as the EUB video, CD-Rom, children's activity book, children's Web site, and science crate.

# Nonmandated But Important Issues and Other Projects Related to PS&SG

# Nonmandated But Important Issues and Other Projects Related to PS&SG

## Nonmandated But Important Issues

The Advisory Committee, in making its recommendations to the EUB, also included comments on a number of issues not included in its terms of reference. These were identified as "nonmandated but important issues" and were commented on separately. The following sections provide brief summaries of work under way that relates to these on nonmandated but important issues:

- Flaring Guide,
- Western Canada Study on Animal and Human Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities,
- Rutgers University Low Level $H_2S$ Exposure Study,
- Protection of Groundwater, and
- Intervener Funding.

### Flaring Guide

In July 1999, the EUB issued *ID 99-6: Guide 60: Upstream Petroleum Industry Flaring Guide*. *Guide 60* implemented recommendations contained in the 1998 report of the Clean Air Strategic Alliance (CASA) Flaring Project Team, including a framework for reducing routine solution gas flaring in Alberta. The guide also consolidated existing EUB flaring and venting requirements and formally extended the sulphur recovery guidelines to facility types other than sour gas plants.

As a result of industry response to the introduction of *Guide 60*, solution gas flaring in Alberta was reduced by 30% in 1999 and 38% in 2000 relative to the 1996 baseline year. Preliminary 2001 data indicate that solution gas flare reductions are now approaching 50%. This achievement substantively betters the 25% reduction target for 2001 recommended by the CASA team and adopted by the EUB in Guide 60.

In February 2001, *GB 2001-6: Guide 60 Updates and Clarification* introduced major revisions to sour well test flaring requirements. These included protocols for assessing air quality impacts and requirements for management plans to prevent exceedance of ambient air quality guidelines for $SO_2$. Flare permit requirements were also made more stringent for development wells.

The second CASA Flaring/Venting Project Team has been active since late 2000, evaluating flaring and venting management in Alberta. The team is currently preparing its recommendations and report to address improvements in flaring management, which will include a framework for the management of venting. The CASA report will support the revision of *Guide 60* later this year.

### Western Canada Study on Animal and Human Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities

The objective of the study is to determine if there is a relationship between exposure to emissions from oil and natural gas field facilities and animal health. Two species are involved in the study, beef cattle and the European starling. Indicators of animal health used in the study include productivity, the incidence of disease, and the structure and function of the immune system. The study will compare the risks of productivity losses across beef cattle and wildlife that are exposed to different sources, types, and concentration of oil and gas field facilities and located in varying distances from these facilities.

A science advisory panel composed of ten internationally renowned scientists with collective expertise in environmental and reproductive epidemiology, animal and human health, and toxicology was established during the early stages of the development of the research designs. Final study designs were released in November 2001.

Field research activities commenced in April 2001 on approximately 200 study herds across western Canada. Working cooperatively with approximately 200 producers and 55 veterinary clinics across western Canada, the team of veterinarians from the Western College of Veterinary Medicine (Regina) has collected productivity, nutritional, and herd management data for approximately 33 000 animals. A beef immunotoxicology study examining the effects of exposure to emissions on the structure and function of the animal's immune system in approximately 20 - 25 animals in each of 25 herds began March 2002. Monthly exposure information is also being collected.

A companion program on wildlife exposure is taking place using European starlings. The human health component of the study has been deferred, pending the results of the animal health study.

Data collection is scheduled to continue until the summer of 2002, with data analysis starting in summer 2002 and a final report expected in spring 2004.

### Rutgers University Low-Level $H_2S$ Exposure Study

Rutgers University and the University of Medicine and Dentistry of New Jersey are developing a clinical study of low-level $H_2S$ exposure of humans. A preliminary study design has been initiated but it has not been finalized. The plan is to conduct multiple exposures of humans to 0.05 parts per million (ppm), 0.5 ppm, and 5 ppm $H_2S$ for two-hour periods. Approximately 20 people would be exposed. The work is scheduled to start in July 2002 and will run for about one year.

### Protection of Groundwater

AENV is continuing development of a provincial water strategy. As part of the "Water for Life" program, Albertans are being consulted through public forums across the province. AENV is looking at how fresh water (both surface and groundwater) is catalogued and managed and is currently gathering input from all stakeholders.

### Intervener Funding

The Advisory Committee commented on intervener funding and recognized that the EUB was already engaged in a major review of its cost policies and procedures and thus made no specific recommendations with respect to intervener funding. However, concerns were raised about the definition of "local intervener" and the uncertainty of eligibility for costs.

Since the Advisory Committee issued its final report in December 2000, the EUB has introduced a number of significant changes to its cost policies and procedures, all of which are detailed in the new *Rules of Practice* and *Guide 31A: Guidelines for Energy Cost Claims*. The guide provides a practical and comprehensive overview of the whole process of filing a cost claim. For example, it explains in detail the criteria for cost recovery eligibility and how to apply for advance funding status. One important change to the EUB's cost policy was to provide advance determination of eligibility for local intervener costs. In this process potential interveners are required to file a short submission with the Board outlining their concerns with the project and how they meet the definition of local intervener. Following its review of the submission, the Board will issue a decision as to eligibility for costs. *Guide 31A* is available from EUB Information Services (telephone 403-297-8190) and on the EUB Web site at <www.eub.gov.ab.ca>.

Another significant change is that the EUB has substantially increased the honoraria available to interveners for the time and effort involved in preparing for a proceeding. Previously, the maximum honorarium for preparation was $500; the EUB has increased this amount to $2500 and may consider awards in excess of this amount in exceptional circumstances.

## Other EUB Projects Related to Public Safety and Sour Gas

After reviewing the recommendations, it was found that many EUB projects under way are related and could affect action plans to address recommendations. The following sections provide a brief summary of this related work:

- Revision to *Guide 56*,
- Sour Gas Harmonization Project,
- Integrated Application Registry, and
- EUB Land Values Study.

### Revision to *Guide 56*

Recommendations 7, 16, 32, 33, 34, 36, 37, 39, 40, 54, 69, 70, 72, 74, and 81 have been identified as potentially requiring changes to *Guide 56: Energy Development Application Guide*. However, many changes to requirements arising from addressing the recommendations are taking place and are not dependent on the revision of *Guide 56*, which is planned for publication in March 2003. Changes to reflect recommendations that have been formally completed by September 2002 will be included within this revision. The remaining recommendations will be included in the next rewrite of *Guide 56*.

### Sour Gas Harmonization Project

There are a number of definitions of sour gas currently used by the EUB, industry, and others, depending on the circumstances. For example, pipelines are classified as sour if the concentration of $H_2S$ is greater than 1%; under worker safety regulations, a well or processing facility is defined as a sour gas work site if the gas contains more than 10 ppm $H_2S$ (i.e., 0.001%).

This situation leads to confusion and inevitably public concern. The EUB has started the Sour Gas Harmonization project to define sour gas in a more consistent manner. The intent is to report progress on this initiative as part of the quarterly progress reports.

### Integrated Application Registry

A number of recommendations relate to the availability of easily obtainable and accurate information. The EUB is currently undertaking a project for the electronic submission and tracking of applications. This Integrated Application Registry (IAR) project is part of the three-year business plan for the EUB Applications and Utilities Branches.

Phase 1 of IAR has been completed. This common registry provides the framework for common entry of all applications, objections, submissions, and hearings, the ability to manage and monitor application timelines, and the facility for public and industry to view the status of applications processed at the EUB.

Phase II is presently in the planning stages.

## EUB Land Values Study

The public has expressed growing concerns in Board hearings and at other venues regarding the negative impact of sour gas development on property values throughout Alberta. As a result, the EUB undertook a land values study to determine what effects have been observed from sour gas operations on property values.

The project team began by gathering property sales data from three sample municipalities selected from the Calgary/south-central region of the province; this region was selected because the population density and the levels of sour gas activity seem to represent a middle ground and, therefore, is most able to provide a representative sampling of the impact of sour gas development on land values. As part of the study, the EUB project team obtained independent advice from academics at the University of Alberta.

Distances between each property and a variety of facilities (such as sour gas plants, sour pipelines, sour wells, and flaring batteries) were recorded. As well, the team analyzed operator ERPs and plotted the areas allocated as EPZs to determine how many properties fell within these areas. All data were then input to a series of statistical models in order to ascertain what effects, if any, sour gas facilities and activity have on property prices.

The analysis of the data is under way. These results will be assessed and a final report will be prepared and made available to the Board, public, government, and industry. The effect of sour gas development on land values could conceivably have implications for some of the PS&SG recommendations that involve socioeconomic or quality-of-life issues (e.g., Recommendation 79: Determine Local Benefits from Sour Gas Development).

## Year-Two Project Starts

# Year-Two Project Starts

The EUB plans to start implementation on 16 of the remaining PS&SG recommendations between April 2002 and April 2003. A short synopsis of each project, by category, is given below.

## Sour Gas Development Planning and Approval

### Recommendations 38, 41, 42, 43, and 44: EUB Hearings and Decisions

*The EUB ensure adequate preparation time for hearings regarding sour gas facilities where there are public health and safety concerns.*

*The EUB increase recognition of public input in decision reports and provide more descriptive material regarding the criteria used in evaluating the public interest and the manner in which surface, subsurface, individual, and other interests (including health impacts, safety, nuisance effects, and the environment) are balanced in evaluating the public interest.*

*The EUB recognize the past performance of the applicant as an operator of sour gas facilities elsewhere in the province when making decisions respecting proposed sour gas facilities.*

*The EUB ensure that appropriate expertise in special subject areas, such as health and probabilistic risk assessment, is available in the form of staff, consultants, EUB Board Members, and Acting Board Members to participate in decisions and to ensure that these subject areas are appropriately dealt with in decision reports.*

*The EUB record public health and safety-related commitments and undertakings given by applicants and better ensure that these are fulfilled.*

#### Intent

The five recommendations focus on improving how the EUB hearing process for sour gas projects deals with public issues and input, particularly with respect to public health and safety. The EUB hearing process should

- ensure that adequate expertise is available to advise EUB panels on issues related to sour gas development,
- provide all parties with adequate opportunity to become informed and prepare,
- be transparent in how evidence provided by hearing participants was understood and considered in reaching conclusions,
- ensure that applicants implement approved projects consistent with relevant regulations, commitments, undertakings, and decision report conditions, and
- consider past performance of applicants when making decisions with respect to proposed sour gas facilities.

#### Action Plan

This recommendation grouping will be integrated into ongoing applications and hearing process improvement begun under Recommendations 34, 35, 36, 37, 39 and 40.

The EUB has initiated work on these recommendations, including designation of Acting Board Members that have expertise in animal health and environmental science. EUB staff continue to consult interveners and applicants with respect to schedules for information requests and hearings. Where decisions have been based on key commitments or have included significant conditions, EUB staff now develop action plans to follow up with licensees, EUB field centres, and other EUB groups to ensure that requirements are met. The EUB has also placed greater emphasis on the timeliness and quality of its decision reports and internal review processes to ensure that the decisions acknowledge the input of hearing participants and also set out the views and reasoning of the Board on the evidence.

The EUB recognizes that the steps taken to date are part of an ongoing process to improve the effectiveness and transparency of the hearing process, as well as the effectiveness of subsequent monitoring and enforcement processes, in addressing public concerns. Additional work remains to be done to improve the hearing process consistent with the Advisory Committee recommendations. The EUB plans to continue with evaluation of hearing processes with a focus on defining and implementing changes on a continuous improvement basis. The recommendations will be the focus of this ongoing process through the end of the 2003/2004 fiscal year. Key steps in the action plan will involve

- inventorying actions taken to date with respect to the intent of the Advisory Committee recommendations by reviewing recent sour gas hearing procedures, decisions, and follow-up action plans;
- identifying the need to more formally document as EUB practices actions that have recently been introduced in the hearing process to better address sour gas issues and public participation;
- identifying gaps and improvement opportunities relative to the recommendations; and
- implementing measures to address gaps in future hearing processes.

It is anticipated that improvements to the hearing process will be iterative over the next few years. That is, improvements will be implemented as they are identified and future hearings will be assessed for performance with respect to the intent of the Advisory Committee recommendations.

Work will commence in the spring of 2002, with development occurring over the next two years. At this stage, it is believed that a proposed end-date would be in January 2004. As we progress with the work and planning, this schedule may be refined.

## Sour Gas Operations

### Recommendation 21: Review Requirements for Older Sour Gas Pipelines, Ensure There Is Adequate Attention to Corrosion Failures

*The EUB review its requirements respecting older sour gas pipelines and the performance history of such pipelines to ensure that adequate attention is being focused on the possibility of corrosion-related or other types of leaks.*

#### Intent

Ensure pipeline requirements focus adequate attention on corrosion-related or other types of leaks.

### Action Plan

The need to develop a protocol with special focus on corrosion-related failures was previously identified through ongoing pipeline leak monitoring. The result was the publication of *Guide 66: Pipeline Inspection Manual* in November 2001. The EUB's pipeline audit protocols have been implemented with an emphasis on sour gas.

Currently, under Recommendation 25, the EUB Field Surveillance Branch is developing an OSI program for pipelines, which has been incorporated into its 2002/2003 Operational Plan. As well, the EUB has requested that the Canadian Standards Association (CSA) put an increased emphasis on sour gas pipeline standards in future publications.

The project team will ensure that pipeline requirements focus adequately on corrosion leaks in sour gas pipelines. The project is scheduled for completion by September 2003.

### Deliverable

The key deliverable for Recommendation 21 is to ensure that there is sufficient attention on corrosion-related failures, which is reflected in the confidence in the requirements for addressing pipeline leaks.

## Recommendation 24: Publicize Requirements to Convert Existing Pipelines to Sour Service

*The EUB publicize the requirements to get an existing pipeline or well reclassified to sour service, in order to dispel the appearance that it is easy to do so.*

### Intent

Review and publicize the current requirements to convert existing pipelines to sour service.

### Action Plan

As of April 2002, some work was already under way on Recommendation 24. The EUB project team will review the current requirements in place to convert an existing pipeline to sour service. The industry will be involved in discussions to assist in identifying required changes. The EUB will draft requirements and provide them to stakeholders for review.

The agreed-upon requirements will be published by the EUB toward the end of 2003.

### Deliverable

The key deliverable for Recommendation 24 is documented requirements for converting existing pipelines to sour service.

## Recommendation 30: Accelerated Enforcement Where Noncompliance Threatens Health and Safety

*The EUB, when dealing with sour gas operations, consider alterations to the enforcement ladder to involve fewer and faster steps and more severe sanctions where there is a potential threat to public health and safety.*

### Intent

Consider alterations to the enforcement ladder to ensure fewer, faster, and more severe sanctions where there is a potential threat to public health and safety.

### Action Plan

The project team will first clarify the intent of this recommendation to ensure that the findings of the Advisory Committee are adequately taken into account during the scope of the project. The first phase of the project will begin at the end of the end of 2002.

It should be noted that in the fall of 2001 the EUB Corporate Compliance Branch, along with SEPAC, CAPP, and other industry representatives, began a scheduled review of *IL 99-4: EUB Enforcement Process*. This Enforcement Review Task Group is currently developing a revised draft, which will be distributed to stakeholders for comment. The project team will consider feedback provided by stakeholders in a final draft. All recommended changes to the enforcement ladder will be presented to the Board for approval before a new IL is issued. This project should be completed by March 2003.

### Deliverable

The key deliverable for Recommendation 30 is an improved enforcement ladder that reflects public health and safety noncompliance matters.

## Recommendations 52 and 53: Setback and Setback Implication Review on Surface Development

*Once the framework and methodology for dispersion modelling and probabilistic risk assessment methodology have been developed (Recommendation 17), the EUB use them as the basis for a review of the current criteria for sour gas setbacks.*

*The EUB should initiate a review of the implications of setbacks on the ability to develop property.*

### Intent

Verify the role of setbacks as a tool in risk management to protect public safety and assess the fairness of the restrictions and impacts on landowners.

### Action Plan

The review on setback and setback implications is dependent on the results from Recommendations 9 and 59, which will provide updated information on the health effects of sour gas exposure, and from

Recommendations 17, 18, and 19, the protocol for *Screening Hazard and Risk Analysis*. For this reason, the estimated start date on the setback review is scheduled for January 2003 and the completion date is projected to be December 2003. Once work on these other initiatives is complete, the project team intends to

- define the original purpose and criteria for the use of setbacks as a tool to protect public safety,
- evaluate current definitions respecting setbacks,
- prepare report of findings on above actions review by stakeholders,
- determine with stakeholders new standards and criteria, if needed, for setbacks,
- determine how revised setbacks will be applied to existing facilities,
- assess the economic impact of setbacks on landowners and development of land, and
- implement new standards and criteria.

Stakeholder involvement will include CAPP, SEPAC, Alberta Municipal Affairs, municipalities, public, RHAs, First Nations and Metis communities, and the land development industry.

### Deliverable

The key deliverable for Recommendations 52 and 53 is the revised setbacks standard and related criteria.

## Emergency Preparedness

### Recommendations 58 and 62: Review Process for Defining EPZs and Require That ERPs Show $H_2S/SO_2$ Evaluation Zones

*The EUB review the approach it uses for determining EPZs on the basis of the health effects information (Recommendation 9) and the review of dispersion modelling and probabilistic risk assessment methodology (Recommendation 17).*

*The EUB require the operator to identify in the ERPs filed with the EUB and emergency response agencies, using dispersion modelling, the distance to where the mandatory evacuation levels for $H_2S$ (20 ppm, 3-minute average) and $SO_2$ (5 ppm, 15-minute average) could be experienced.*

### Intent

Review current criteria used for establishing the size of EPZs and determine if changes are required.

### Action Plan

The project team will begin work on Recommendations 58 and 62 in January 2003 by preparing a comparison of new EPZ values based on the new protocol for *Screening Hazard and Risk Analysis* (defined as part of Recommendations 17, 18, and 19) and health effects information (Recommendations 9 and 59) to current EPZ graphs.

The results of the comparison will then be presented to stakeholders for review and feedback; the project team will consider the feedback and define new standards and criteria for calculating EPZs. The new standards will be incorporated into the new *Emergency Management Guide* being developed under Recommendations 57, 63, and 64.

The projected completion date for implementing new EPZ criteria is September 2003.

### Deliverable

The key deliverable on this project is a revised standard for calculating EPZs.

## Recommendation 65: Capability to Monitor at Significant Release Event

*The EUB undertake a review of the current monitoring response capabilities for events involving significant sour gas releases and ensure that adequate capability exists.*

### Intent

To ensure that there is sufficient emergency response monitoring capability available to respond quickly and effectively to address the air quality and public health and safety issues that may arise as a result of significant sour gas releases.

### Action Plan

The EUB's Field Surveillance Branch will lead work on Recommendation 65. Starting June 2002, the team will work with Alberta Environment, the sour gas industry (including service companies), and other government departments, such as Alberta Human Resources, to gather information and assess the current monitoring capacity available in Alberta. A review of historical release data will be conducted in order to identify potential ongoing requirements, including identifying strategic locations where monitoring equipment would be most accessible in the event of an emergency.

A comparison of the current capacity versus the identified requirements will be conducted and recommendations will be made to address any gaps. An implementation plan will also be prepared. This project is scheduled for completion by the end of December 2002.

### Deliverables

The key deliverables on Recommendation 65 are an inventory of available monitoring equipment, including locations, and a plan to enhance monitoring capacity, if this is found to be necessary.

## Information, Communication, and Consultation

### Recommendation 3: EUB/IOGC/INAC/First Nations Jurisdictional Issues

*The working relationships established between the EUB and IOGC, IRC, INAC, and other relevant federal government departments recognize the different jurisdictional circumstances respecting First Nations.*

#### Intent

To outline the mandate and responsibilities of the EUB, IOGC, INAC, and the IRC in relation to energy resource development on reserve lands in Alberta.

#### Action Plan

Starting in September 2002, the EUB Law Branch will examine the legislation, mandate, and jurisdiction of the EUB, IOGC, INAC, and IRC pertaining to energy resource development on reserve lands in Alberta and the types of working relationships the organizations have developed with one another, such as a memorandum of understanding and other types of agreements. The projected end date on this project is February 2003.

### Recommendation 71: Stringent Action for Failing to Conduct Effective Public Consultation

*Stringent action, such as denying the application, be taken by the EUB for failure of a company to conduct effective public consultation programs.*

#### Intent

That there be clear enforceable consequences to industry for failure to conduct effective public consultation programs.

#### Action Plan

The project team will develop a system of enforcement actions that correspond with the updated requirements on citizen and community involvement under way as part of Recommendations 69, 70, and 74. External stakeholders that will be involved include CAPP, SEPAC, Canadian Association of Petroleum Landmen, synergy groups, and the public. The projected end date for Recommendation 71 is September 2003.

### Recommendation 86: Timely and Meaningful Public Consultation for First Nations and Metis

*The EUB strictly apply its existing requirements that industry conduct timely and meaningful public consultation in and around First Nations lands and Metis settlements.*

#### Intent

To have the same level of public consultation with First Nations and Metis communities as is expected in every other Alberta community.

#### Action Plan

The project team will review the existing jurisdictional boundaries related to oil and gas development on First Nations lands and Metis settlements. In consultation with other relevant provincial and federal ministries and departments and First Nations and Metis peoples, the project team will develop a clear and comprehensive set of guidelines and expectations for industry with regard to community involvement on First Nations lands and Metis settlements.

External stakeholders that will be involved include First Nations and Metis communities, IRC, IOGC, AAAND, and Alberta Energy.

It is expected that these actions will be completed in the next 18 months.

# Appendices

# Appendix 1: Acronyms and Abbreviations

| | |
|---|---|
| **AAFRD** | Alberta Agriculture Food and Rural Development |
| **AAAND** | Alberta Aboriginal Affairs and Northern Development |
| **ADR** | Appropriate Dispute Resolution |
| **AENV** | Alberta Environment |
| **AHW** | Alberta Health and Wellness |
| **AHR** | Alberta Human Resources |
| **ARC** | Alberta Research Council |
| **CAPP** | Canadian Association of Petroleum Producers |
| **CEPA** | Canadian Energy Pipeline Association |
| **CSA** | Canadian Standards Association |
| **DOE** | Department of Energy |
| **EPZ** | emergency planning zone |
| **ERP** | emergency response plan |
| **EUB** | Alberta Energy and Utilities Board |
| **$H_2S$** | hydrogen sulphide |
| **IAR** | Integrated Application Registry |
| **ID** | interim directive |
| **IL** | informational letter |
| **INAC** | Indian and Northern Affairs Canada |
| **IOGC** | Indian Oil and Gas Canada |
| **IR& RP** | **I**nvestigation, **R**eporting **and** **R**esponse **P**lanning for the Upstream Petroleum Incidents |
| **IRC** | Indian Resource Council |
| **OSI** | **o**perator history, site **s**ensitivity, **i**nherent risk |

| | |
|---|---|
| **PS&SG** | Public Safety and Sour Gas |
| **PSIT** | Public Safety Implementation Team |
| **RHA** | Regional Health Authority |
| **SEPAC** | Small Explorers and Producers Association of Canada |
| **$SO_2$** | sulphur dioxide |

# Appendix 2: Full Text of Recommendations

**Recommendation 1:**

*In its role as the principal regulator of the Alberta oil and gas industry, the EUB work with provincial and federal government departments, municipalities, RHAs, tribal councils, IOGC, IRC, INAC, and any other agency that has jurisdiction respecting the impacts of sour gas on public health and safety in Alberta to*

- *clarify roles, responsibilities, and relationships respecting sour gas and public health and safety,*
- *identify and eliminate any gaps in the system, and*
- *identify overlaps in jurisdiction and either eliminate the overlap or develop formal working agreements to avoid unnecessary duplication and confusion as to responsibilities.*

In this regard, the EUB should consider the designation of an individual or group within the EUB to coordinate jurisdictional matters.

**Recommendation 2:**

*The working relationships established between the EUB and other involved jurisdictions (particularly the RHAs, municipalities, Municipal Affairs Disaster Services, AENV, and AHW) need to be strengthened to include meaningful involvement of the jurisdictions in establishing effective and efficient standards, criteria, policies, and processes for dealing with the public health and safety aspects of sour gas facility applications.*

**Recommendation 3:**

*The working relationships established between the EUB and IOGC, IRC, INAC, and other relevant federal government departments recognize the different jurisdictional circumstances respecting First Nations.*

**Recommendation 4:**

*The EUB work with other involved parties to prepare a sour gas and public health and safety roles and responsibilities document and a summary brochure and widely distribute them to the public, industry, and other interested parties.* These documents should be concisely written in understandable language and make clear who should be contacted to answer questions, deal with complaints and concerns, and report emergencies.

**Recommendation 5:**

*The immediate formation of a task force of senior decision makers that would investigate the possibility of improving coordination between subsurface and surface planning and development.* The task force should be empowered to look at all relevant aspects of planning and development, including the mineral leasing system, and should include appropriate representation from Alberta Resource Development, Alberta Municipal Affairs, AHW, AENV, the Alberta Energy and Utilities Board, Aboriginal groups, urban and rural municipalities, RHAs in sour gas areas and their associations, surface land developers, the public, and the oil and gas industry. The Task Force should investigate and consider, among other matters, the following:

- The development by the oil and gas industry, government, and urban and rural planning authorities of a complementary planning and development process. The Task Force might consider EUB Interim Directive *ID 96-1* (regarding Hay-Zama Lake Complex – Special Requirements) as a useful precedent to assist in coordinating surface and subsurface development near populated areas, such as urban and seasonal recreational centres, as well as near First Nations and other Aboriginal lands.

- The development of policies to ensure that sour gas reserves are delineated and recovered as soon as reasonably possible in populated areas (such as those identified in existing Inter-municipal Development Plans [IDP], designated fringe areas, or intensive transportation corridors), while still providing the industry with a reasonable opportunity to develop its mineral leases.
- Where there are current land-use conflicts related to sour gas and public health and safety, the development of Land Use and Resources Development (LRD) Agreements by the surface and subsurface owners, relevant municipal planning authorities, and the EUB. These agreements could provide a workable solution for all parties involved in terms of development and timing. EUB Decision 2000-20, *Dynegy Canada Inc., Application for Pipeline Licence Amendments*, is an example of how these types of agreements could be used. This might be accomplished through effective public consultation processes.
- The promotion of information exchange between industry, government, and Aboriginal people, regarding heritage (traditional lands and sacred sites), land-use planning, development, building, and emergency planning issues.
- Possible changes to the mineral leasing system. These might include matters such as leasing larger blocks of common ownership for sour gas near population centres and warnings when smaller blocks are posted that common operations are preferred; qualification criteria to ensure that operators have the necessary risk management standards and resources to handle sour gas; and notification to potential bidders of possible restrictions on resource development (such as lease time limit) in areas within or adjacent to urban centres or where land-use conflicts are relatively near-term.
- Possible restrictions on municipal development until the sour gas resources are recovered or building restrictions through land-use bylaws in areas where there is high potential for sour gas development.
- Possible modification to the existing membership of the Crown Mineral Disposition Review Committee to address the possible impacts of sour gas development on public health and safety.

**Recommendation 6:**

*Adoption by the EUB of the recommendation that there be more rigid enforcement by the EUB of its gas plant proliferation policy as presented in the report recently submitted to the EUB by the Sulphur Recovery Guidelines Review Group.* This Sulphur Recovery Guidelines Review report is available on the EUB Web site at <www.eub.gov.ab.ca/bbs/products/reports/srgag-2000-04.pdf>.

**Recommendation 7:**

*Revisions to EUB guides to require operators to include in their applications for critical sour wells, pipelines, and facilities a review and discussion of options to utilize existing sour gas infrastructure in the area in order to minimize the extent to which the public is impacted by additional sour gas development.* This would include both the applicant's facilities as well as other operators' facilities in an effort to reduce proliferation of well sites and sour gas pipeline infrastructure. Options may include consideration of directional drilling, target flexibility, and the establishment of pipeline corridors.

**Recommendation 8:**

*Revisions to EUB guides to encourage operators to consider methods for reducing the visual and psychological impacts of sour gas facilities near people.* Options may include improved communications and relationships between the industry and the public, or buffering techniques, such as landscaping and berming, where these do not create additional hazards.

**Recommendation 9:**

*The EUB work with Alberta Health and Wellness, regional health authorities, Alberta Environment, Alberta Human Resources, industry, and other stakeholders to ensure that comprehensive health effects information (qualitative and quantitative) is developed, as soon as practical due to its urgency.* This information is needed to conduct the review of the approach to emergency response planning referred to in Recommendation 58. The review should cover both the constituents of sour gas mixtures and the combustion products of sour gas, including $SO_2$, reduced sulphur compounds, and complex hydrocarbons. (AHW has committed to lead the review for $H_2S$).

**Recommendation 10:**

*The EUB, Alberta Health and Wellness, Alberta Environment, Alberta Agriculture, Food and Rural Development, Alberta Research Council, RHAs, Industry, and other interested parties, including Alberta universities, jointly establish an independent Scientific Review and Advisory Committee to provide recommendations on required research programs related to sour gas and health.* This should be an ongoing activity to ensure that the research activity supports best practices by all parties. Among the tasks of this committee would be to ensure recognition and thorough assessment of completed and ongoing studies and the dissemination of the information.

**Recommendation 11:**

*The EUB work with the Alberta Government to ensure financial support is available to address gaps in research respecting the health effects of sour gas.* Such research should complement the multi-government *Western Canada Study on Animal and Human Health Effects Associated with Exposure to Flare Emissions.* This research study should review the current gaps in human health research to ensure the proposed study plan addresses the relevant issues.

**Recommendation 12:**

*Alberta Health and Wellness work with regional health authorities and physicians, through the Alberta Medical Association, to ensure a consistent, appropriate, and coordinated response to individuals exposed to major $H_2S$ releases.* This should be a 24-hour, seven-day-a-week response, possibly utilizing the Poison and Drug Information Service.

**Recommendation 13:**

*The EUB work with Alberta Health and Wellness and Alberta Human Resources to establish a high-level exposure registry to track individuals who have been knocked down or had other substantial exposures to sour gas.* This would enable tracking of significant human exposures to $H_2S$ and help ensure the consistent follow-up of exposed individuals.

**Recommendation 14:**

*The EUB, First Nations, Health Canada, and regional health authorities ensure there is effective communication on the health services expectations of the various parties related to sour gas in the vicinity of First Nations communities.*

**Recommendation 15:**

*The EUB, industry, Alberta Environment, Alberta Health and Wellness, regional health authorities, and federal regulators, as required, ensure that there is a thorough follow-up process after major sour gas releases (such as well blowouts or pipeline failures) to determine impacts and identify opportunities for response improvement.*

**Recommendation 16:**

*The EUB review and organize its existing large quantity of sour gas data on well, pipeline, and facility leaks, ruptures, flares, and venting to provide a historical database that is accurate and complete, and, in conjunction with other stakeholders, urgently develop and maintain new databases that deal specifically with sour gas, and make such databases available to the industry and the public.* Databases should be accurate and comprehensive and include data on sour reservoirs, failures, release occurrences, release rates, enforcement actions, and continuous improvement. Recognizing that the databases can be only as good as the raw input data, there should be regulatory requirements that support the accuracy and submission of related information. The Committee acknowledges that implementation of this recommendation is likely to be costly in terms of initial development and continuous maintenance but believes it is critical to the process.

**Recommendation 17:**

*The EUB, in cooperation with stakeholders, develop a framework and methodology for standardizing dispersion modelling and probabilistic risk assessment that will provide clarity to the industry and the public.* This would include review of existing models and defining a set of standard models and methods that will be accepted for evaluating health and safety exposure hazards and probabilistic risk from sour gas releases. AENV has developed a set of standard dispersion models for routine industrial releases that should be reviewed by the EUB.

The EUB should define the range of conditions for which each model is suited. A list of standard release, dispersion, and probabilistic risk models and a set of standardized scenarios of release rates, atmospheric conditions, and sour gas exposure effects should be made readily available by the EUB so that everyone has access to this information. These same models and methods should be suitable for assessing exposure close to the source, and evaluating policies for setbacks, emergency planning zones, and mitigation strategies, such as ignition and sheltering indoors. Where a non-standard approach to hazard or probabilistic risk modelling is brought forward by the industry or the public, the EUB should be responsible for bringing all parties together early in the process to discuss and resolve differences.

**Recommendation 18:**

*The EUB require that users of sour gas hazard and probabilistic risk assessment techniques clearly state their methods and assumptions.* The sour gas hazard or probabilistic risk assessments should state the methods and assumptions in sufficient detail that a third-party could duplicate the numerical results.

**Recommendation 19:**

*The EUB be responsible for reviewing and updating its standard models and methods regularly.* As new techniques become available and are demonstrated to be superior, they should be adopted by the EUB. This responsibility would require the EUB to maintain the in-house expertise required to evaluate and adapt existing atmospheric dispersion and toxic risk models used by other agencies such as AENV and other national and international agencies and researchers.

**Recommendation 20:**

*The EUB consolidate, to the degree possible, all of its regulatory requirements related to sour gas, and develop a single, concise document that summarizes all of its sour gas-related requirements and widely distribute the summary document.*

**Recommendation 21:**

*The EUB review its requirements respecting older sour gas pipelines and the performance history of such pipelines to ensure that adequate attention is being focused on the possibility of corrosion-related or other types of leaks.*

**Recommendation 22:**

*The EUB implement stronger measures to safeguard against third-party damage to sour gas pipelines.*

**Recommendation 23:**

*The EUB review its requirements for approving the reclassification of sweet gas facilities to sour service and for the reactivation of older sour wells that have not been produced for ten or more years.* In particular, attention should be focused on a review of production equipment and metallurgy, including tubulars and wellhead facilities, to ensure suitability for sour gas service.

**Recommendation 24:**

*The EUB publicize the requirements to get an existing pipeline or well reclassified to sour service, in order to dispel the appearance that it is easy to do so.*

**Recommendation 25:**

*The EUB increase the frequency of inspections and audits and continue to conduct both arranged and unannounced inspections of sour gas operations and develop simple, practical ways of informing nearby residents of inspection and audit results.*

**Recommendation 26:**

*The EUB increase inspections and audits for operators without a proven track record in sour gas operations and for those with a history of noncompliance.*

**Recommendation 27:**

*The EUB inspect critical sour wells located near people at least once during or immediately prior to drilling of the critical zone and inform nearby people of the inspection results.* The inspections should include considerable focus on ensuring that the crew is adequately trained and certified.

**Recommendation 28:**

*The EUB give highest priority to sour gas complaints, investigating them within one day, whenever possible, and always following up with the complainant.*

**Recommendation 29:**

The EUB field staff become more involved in landowner-operator discussions of sour gas concerns and in multistakeholder groups and assist in answering questions and resolving issues, particularly as they relate to public health and safety.

**Recommendation 30:**

*The EUB, when dealing with sour gas operations, consider alterations to the enforcement ladder to involve fewer, faster steps and more severe sanctions where there is a potential threat to public health and safety.*

**Recommendation 31:**

*The EUB increase the extent to which it makes available the names of companies and the enforcement actions taken where there are major and serious infractions, as defined by the enforcement ladder, of sour gas regulations related to public health and safety.* The EUB should continue recognizing those companies with outstanding records by appropriately reducing surveillance. It should also consider, along with industry and government, different ways in which recognition or further incentive could be provided to those whose records are exemplary and who continuously exceed expectations.

**Recommendation 32:**

*The EUB support area planning among operators and require well applications to include at least general information regarding existing and possible future area plans where sour gas is involved near people.*

**Recommendation 33:**

*For sour gas near people, the EUB require project plans as part of well applications where a well is part of a larger project of the applicant and encourage applications for more than one well and facility at one time where feasible.*

**Recommendation 34:**

*The EUB increase and improve coordination between itself and AENV, other involved government departments, and municipality and regional health officials.* It should develop a system that provides for their involvement in relevant EUB policy making and, where applicable, for their early, efficient, and effective involvement in the review of applications dealing with sour gas and public health and safety. This matter is also dealt with in recommendations 1 and 2.

**Recommendation 35:**

*The EUB carry out a more detailed staff review of critical sour well applications immediately upon their filing and before licensing of the well. In other words, there would be no "routine" designation for critical sour well applications.* This recommendation has been adopted through a recent change to EUB policy.

**Recommendation 36:**

*The EUB require information in applications for critical sour wells that demonstrates how the applicant will ensure that involved employees will be trained and certified in accordance with the standards.*

**Recommendation 37:**

*The EUB encourage mediation efforts and increase EUB staff involvement in an attempt to resolve concerns among stakeholders outside of the formal hearing process.* This may require additional trained EUB staff. The Committee is aware of the recent announcement that the EUB has approved the *Report for Implementation of Appropriate Dispute Resolution (ADR)* and suggests that the EUB monitor the use and effectiveness of this approach to determine if further initiatives are required.

**Recommendation 38:**

*The EUB ensure adequate preparation time for hearings regarding sour gas facilities where there are public health and safety concerns.*

**Recommendation 39:**

*The EUB increase efforts to make hearings less formal and more user friendly.* One example of how this might be done is to hold more prehearing conferences, where there is a potential to better scope the hearing, explain the hearing process to public participants, and resolve differences of views before the hearing regarding eligibility for intervener costs.

**Recommendation 40:**

*The EUB rewrite its brochure,* Guide 29, *on the hearing process to make it more understandable and then make it more widely available to the public.*

**Recommendation 41:**

*The EUB increase recognition of public input in decision reports and provide more descriptive material regarding the criteria used in evaluating the public interest and the manner in which surface, subsurface, individual, and other interests (including health impacts, safety, nuisance effects, and the environment) are balanced in evaluating the public interest.* The EUB should consider providing improved access to decision reports, for example, through a key-word index.

**Recommendation 42:**

*The EUB recognize the past performance of the applicant as an operator of sour gas facilities elsewhere in the province when making decisions respecting proposed sour gas facilities.*

**Recommendation 43:**

*The EUB ensure that appropriate expertise in special subject areas, such as health and probabilistic risk assessment, is available in the form of staff, consultants, EUB Board Members, and Acting Board Members to participate in decisions and to ensure that these subject areas are appropriately dealt with in decision reports.* Given the increasing importance of health issues relative to sour gas applications, consideration should be given to appointing a medical doctor with toxicological and health impact experience as a full or part-time EUB Board Member.

**Recommendation 44:**

*The EUB record public health and safety-related commitments and undertakings given by applicants and better ensure that these are fulfilled.*

**Recommendation 45:**

*The EUB place greater emphasis on the need for its involved staff to be neutral when dealing with the public and industry respecting inspection results, complaints, and the resolution of concerns.* This may require special training.

**Recommendation 46:**

*The EUB place greater emphasis on its role as a regulator to protect the public and provide a higher profile for its involvement in matters related to public health and safety.* One option for achieving a higher profile that might be considered could be the creation of a public health and safety department within the EUB.

**Recommendation 47:**

*The public be made aware of the clear distinction between Alberta Resource Development's role of promoting the development of Alberta's resources and the role of the EUB as a regulator that ensures that if developments are approved they take place in a manner that is in the public interest.*

**Recommendation 48:**

*The manner of funding the EUB be reviewed, including a consideration of the possibility of returning the funding back to an equal sharing by industry and government to reflect the dual role of regulating the industry and serving public interest.* In this respect, a more conscious effort by the EUB is required to make the public aware that the contribution of the industry to the funding of the EUB is not voluntary, but is a tax-like levy on production and facilities that, like any other tax, must be paid. It should also be made clear that the funding through an industry levy does not include control over EUB operational matters.

**Recommendation 49:**

*The EUB review its requirements respecting sour gas drilling and completion, sour gas operations, and other industry practices and equipment to ensure they maintain pace with improvements in technology.*

**Recommendation 50:**

*The EUB, in conjunction with industry and appropriate educational institutions, confirm or establish the necessary requirements to ensure adequate training and knowledge of sour gas workers.*

**Recommendation 51:**

*The EUB, along with industry and government, investigate methods that will result in greater encouragement for all industry management to take sour gas issues and concerns more seriously and to impart this position and attitude to all company and contract personnel involved with sour gas operations.*

**Recommendation 52:**

*Once the framework and methodology for dispersion modelling and probabilistic risk assessment methodology have been developed (recommendation 17), the EUB use them as the basis for a review of the current criteria for sour gas setbacks.*

- The review should be carried out by a stakeholder group including representatives of the relevant regulatory agencies, government departments, First Nations, Metis, municipalities, RHAs, the public, the land development industry, and the oil and gas industry.

- There should be some overlap in membership with the group studying dispersion modelling and probabilistic risk assessment.
- The review should address, among other questions, whether the current approach to setbacks is appropriate, the number of levels of categories is acceptable, and whether the actual setback distances are appropriate. It should also assess whether a common set of setback distances can be agreed upon by different jurisdictions.
- If changes to setbacks are to occur, the stakeholder group should address the appropriate manner for handling those situations where current facilities are based on existing approvals.

**Recommendation 53:**

*The EUB should initiate a review of the implications of setbacks on the ability to develop property.* The review should be carried out by the same stakeholder group noted in recommendation 52 above to review the criteria of setbacks.

**Recommendation 54:**

*The EUB continue its current approach of reviewing all site-specific ERPs in detail, including the criteria used to determine the size of the EPZ, and all site-specific information included in an ERP.*

**Recommendation 55:**

*The EUB assess the capability of an operator to effectively implement an ERP at the time of application, and develop specific requirements to cover ERP validation through mandatory testing and exercises.* This assessment should relate to financial capability as well as the operator's access to resources required to manage an emergency situation. The EUB should take into consideration the operator's compliance record and ability and willingness to effectively coordinate, communicate, and consult with EPZ residents and emergency service providers. Additionally, operators should be required to involve other responders, such as municipal authorities and RHAs, in exercises at least annually.

**Recommendation 56:**

*The EUB audit existing ERPs on a more frequent basis to ensure that*

- *the operator has the capability to implement its ERP,*
- *plans are updated according to requirements regarding frequency of updates,*
- *updating takes place immediately upon change of operatorship and prior to a new operator physically operating the facility, and*
- *adequate communication of updates with EPZ residents and emergency responders takes place.*

**Recommendation 57:**

*The EUB require the operator to coordinate roles and responsibilities to be followed in the event of an emergency with other emergency responders through early and effective discussions with the municipal Director of Disaster Services, and the regional health authorities' Medical Officer of Health during plan development.*

**Recommendation 58:**

*The EUB review the approach it uses for determining EPZs on the basis of the health effects information (recommendation 9) and the review of dispersion modelling and probabilistic risk assessment methodology (recommendation 17).* The review of EPZs should be through a stakeholder process that includes involved government departments, municipalities, RHAs, the public, Aboriginal representatives, the land development industry, and the oil and gas industry. There should be some overlap in the membership of this review group and the group reviewing dispersion modelling and probabilistic risk assessment.

**Recommendation 59:**

*The EUB work with Alberta Health and Wellness, regional health authorities, and other stakeholders to develop clear requirements and evacuation criteria to address the hazard of $SO_2$ as a result of ignition.*

**Recommendation 60:**

*The EUB requires industry to use the EUB's current standard approach (EPZ curves) to determine EPZs until the review of EPZs proposed in recommendation 58 is completed.*

**Recommendation 61:**

*In the interim until the review of the approach to EPZs is completed the EUB not approve a reduced EPZ unless it is conditional on the immediate ignition of the well, and the EUB is satisfied that the well can be immediately ignited and kept continuously burning. The EUB must also be satisfied that the ERP adequately addresses the potential hazards to the public within the reduced zone and also within an awareness zone out to the distance of the calculated EPZ based on the current EUB approach (EPZ curves), and that a specific assessment demonstrates protection of human health.*

**Recommendation 62:**

*The EUB require the operator to identify in the ERPs filed with the EUB and emergency response agencies, using dispersion modelling, the distance to where the mandatory evacuation levels for $H_2S$ (20 ppm, 3-minute average) and $SO_2$ (5 ppm, 15-minute average) could be experienced.*

**Recommendation 63:**

*The EUB encourage operators to establish mutual aid agreements in the areas with intensive industry development and multiple operators.* This should include encouragement for operators to coordinate mutual aid with other industries (such as the forestry sector and petrochemical industries) in emergency response planning.

**Recommendation 64:**

*The EUB continue its initiative to work with stakeholders to develop clear, complete, and concise guidelines and requirements for ERP development and implementation.* In doing so, the following should be considered:

- standardizing the contents and format of ERPs as much as possible, including consideration of mandatory components and terminology;
- standardizing the requirements for a specific assessment of health impacts for emergency response planning;

- including site-specific conditions of wind, topography, population distribution, access and evacuation routes, livestock management, and other community issues;
- developing accurate resident information, including determination on a self-declaring basis of special needs persons requiring evacuation assistance or those hypersensitive to sour gases; and specifying more detailed requirements for resident information packages and the timing of their availability;
- referring critical sour gas well ERPs by the EUB to relevant municipal responders and regional health authorities at the application stage, for comment regarding response capability;
- filing approved critical sour ERPs with the EUB, municipal emergency response agencies, and other emergency responders, including mutual aid groups where they exist;
- establishing criteria for introducing a planning zone that is reduced from that determined by the EUB's standard approach, clarifying the meaning of "immediate ignition," identifying additional public protective measures to be required to ensure public health and safety, and describing roles and responsibilities of responders within the reduced EPZ, the Awareness Zone, and other potentially affected areas beyond;
- annually reviewing and updating ERPs, including individual resident details and other users of land;
- establishing clear evacuation, ignition, and sheltering criteria, including criteria for when each of these measures would be considered acceptable;
- defining requirements for "post-event" debriefings and follow-up activities; and
- specifying how isolated communities and individuals (such as trappers, First Nations hunters, farmers, and transients) are planned for, including those where there is a lack of cellular coverage, which may cause communication delays.

**Recommendation 65:**

*The EUB undertake a review of the current monitoring response capabilities for events involving significant sour gas releases and ensure that adequate capability exists.* This review should include an assessment of the number, type, reliability, sensitivity, and location of the current monitoring response capability.

**Recommendation 66:**

*The EUB, in cooperation with other emergency or episodic responders, ensure that the monitoring roles and responsibilities are clearly defined and that monitoring efforts and capabilities are coordinated.*

**Recommendation 67:**

*The EUB, with the assistance of industry and researchers, promote and support the development of exposure monitors that can be used to measure personal exposure of the public to sour gas-related substances in a practical manner.* Guidelines would also be required as to the circumstances in which they should be used.

**Recommendation 68:**

*The EUB enhance its capability to conduct monitoring as part of its complaint response and compliance programs.*

**Recommendation 69:**

*The EUB establish a staff resource team that focuses on public consultation to assist industry in providing a more consistent approach to public consultation, including consultation with Aboriginal people.*

**Recommendation 70:**

*The team referred to in recommendation 69 work with CAPP, training institutions and other industry associations to develop public consultation training programs that reflect EUB requirements and expectations for public consultation and that incorporate training in the practices set out in the CAPP Guide for Effective Public Involvement.*

**Recommendation 71:**

*Stringent action, such as denying the application, be taken by the EUB for failure of a company to conduct effective public consultation programs.*

**Recommendation 72:**

*The EUB develop a list of suggested questions to assist the public during the public consultation process.*

**Recommendation 73:**

*Formation of an information office located within the EUB and supported by a stakeholder committee, to provide accurate, reputable, neutral information related to sour gas development and to be a key contact for referring the public to sources of additional relevant, reputable information.* The objective would be to work toward building trust and understanding among industry, the public, and the EUB to liaise with stakeholder groups throughout the province. The existence of this information office and its role should be widely publicized and the office should be easily accessible to the public. Advertising could possibly take place through distribution of initial information packages provided to the public during public consultation and through EUB field centres and the EUB Web site.

**Recommendation 74**:

*The EUB initiate, in conjunction with industry and training institutions, the development of effective communications training programs for those individuals responsible for communicating with the public respecting the technical aspects of sour gas.* Examples of programs would include risk communication methodology and emergency response consultation.

**Recommendation 75:**

*The EUB conduct information sessions, workshops, and panel discussions involving the public, industry, and other stakeholders specifically focusing on raising awareness and understanding of sour gas developments, rights of surface and subsurface owners, and how the EUB determines the public interest in making decisions on applications.*

**Recommendation 76:**

*The EUB prepare material providing clear, understandable information on technical matters such as ERPs, EPZs, setbacks, rights of surface and subsurface owners, risk communication, and hazard and risk assessment.*

**Recommendation 77:**

*The EUB field centres identify key operator contacts, telephone numbers, and locations of facilities and provide this information to the public in order to enable them to more efficiently contact appropriate industry officials regarding a development in their area, if they require information or have concerns.* This information would need to be updated regularly and the public advised of changes.

**Recommendation 78:**

*The EUB encourage the development of mutual aid agreements where there are multiple operators in an area.* This is also addressed in recommendation 63. Consideration should be given to having one central contact for the public to contact respecting information requests, concerns, or complaints, rather than members of the public having to determine the operator responsible for the facility relating to the query.

**Recommendation 79:**

*The EUB initiate a study involving industry, government, the public, and municipal representatives to determine the nature of local benefits, such as reduced property taxes and local business opportunities, to communities impacted by sour gas development.*

**Recommendation 80:**

*The EUB put greater emphasis on developing relationships with all of its stakeholders.* This might involve the holding of more EUB open houses, making staff more readily available to participate in meetings of concerned citizens, and making presentations about its role to interested groups throughout Alberta. This is also addressed in recommendation 75.

**Recommendation 81:**

*The EUB develop a brochure for the public that focuses on the role of the EUB and provides contact names and phone numbers to be given out when industry does public consultation.* It should also be widely distributed to all interested parties, such as municipalities, and posted on the EUB Web site. The brochure must be clear and succinct, and be kept up to date. Consideration should be given to having a brief summary brochure for those with limited interest and a more detailed one for those with greater interest.

**Recommendation 82:**

*The EUB engage appropriate staff, including First Nations persons, to ensure more interaction among the EUB, Aboriginal people, and industry (including contractors).* These staff would ensure that cultural awareness sessions are conducted for EUB staff and that informational sessions are conducted for Aboriginal people, specifically focusing on building understanding of sour gas development. Important issues to be addressed include isolated communities, communications systems, and language barriers.

**Recommendation 83:**

*The EUB consider forming an Aboriginal advisory committee or a series of regional advisory committees to better ensure that Aboriginal issues are recognized.* Consideration should also be given to ad hoc committees to deal with specific issues.

**Recommendation 84:**

*The EUB work with federal and other government departments to ensure that the relationship among federal and provincial government departments, First Nations and Metis communities, and adjacent municipalities is clear, that gaps in regulation are eliminated, and that areas of overlap are handled efficiently through the necessary agreements.* This matter is also dealt with in recommendations 1 and 3.

**Recommendation 85:**

*The EUB ensure the existence in First Nations and Metis communities near sour gas developments, of a good complaint and incident response program that would have monitoring capability and surveillance and monitoring programs that provide good information on general air quality.*

**Recommendation 86:**

*The EUB strictly apply its existing requirements that industry conduct timely and meaningful public consultation in and around First Nations lands and Metis settlements.*

**Recommendation 87:**

*The EUB work with Indian and Northern Affairs Canada (INAC), Health Canada (regarding First Nations), and Alberta Municipal Affairs (regarding Metis settlements) to provide adequate infrastructure and resources to the First Nations and Metis for planning and development of disaster services capability.*

The planning should include the following matters:

a) identification of overlap between plans;

b) understanding of the roles of all parties, particularly as they relate to evacuation procedures;

c) effective communication in the case of emergencies with the First Nations and Metis if they are in the affected region, even if outside of the EPZ;

d) identification of resources needed for the development and implementation of disaster plans and/or perhaps a disaster office or a disaster fund; and

e) development of mutual aid agreements.